THE

VETERINARY JOURNAL

NOVEMBER 1903.

Editorials.

THE ARMY VETERINARY SERVICE.

ON another page we print the full text of the new Royal Warrant which has been promulgated to the Army by the Secretary of State for War. The Warrant will have been read, we trust, by every veterinary surgeon in the country long before this number of the VETERINARY JOURNAL reaches them, and as it speaks for itself we will make only brief comments upon it, all the more so as we ourselves bore a humble part in suggesting improvements to His Majesty's Government.

We feel quite sure that the most fastidious veterinarian will be satisfied with the provisions of the Warrant. Combatant rank has been granted to us, so that it matters not whether a colonel, major, or captain is a fighting man, or engaged in the more humane work of tending sick horses, he has the same powers and the same privileges. In a recent number of the JOURNAL we pointed out the grave consequences to the Army and to the nation of refusing to veterinary officers full Army rank. When a young veterinary candidate for honours knows that an officer in charge of the horses of a cavalry regiment runs the risk of losing at a critical time all or the greater part of his hospital "nurses," he thinks twice before he accepts the responsibility. Again, when a disaster befalls an army or a regiment, it too often happens that a desire for vengeance takes the place of a desire for justice, and a victim is sought for and punished without remorse, and often with a sense of satisfaction. This appalling prospect has deterred many a good and many a brave man. In vain, it may be, the veterinary officer protests that the fault was not his, but that of his brother officers, who, perhaps quite ignorantly, or at worst thoughtlessly, left him to perform an impossible task. It is so difficult to prove the might have been, or even to demonstrate the would have been. Apart from the serious risk of disgrace or condemnation, there was always the vexatious delay which beset the work of the Army veterinary surgeon under the old regulations. He had so frequently to obtain leave from his colonel to do this or that piece of work which required the assistance of half a score of orderlies, and perhaps

when the help was obtained the opportunity had passed, for in medicine, as we all know, speed and promptitude are of the first importance.

In this connection we may express our gratification at noticing the warm welcome which has been extended to us by the *Army and Navy Gazette.* That journal has shown itself quite superior to any feeling of jealousy or disdain, and acknowledges with manly frankness our full claim to combatant rank.

The conditions of pay, length of service, and pension are very satisfactory, and such as may readily attract the best and most useful men to the service. We foresee the time when an officer of high rank, perhaps a general officer, having three sons of diverse but equal talents to equip for life and furnish with a suitable career, will find that his duty to his sons will be most truly performed by entering one for combatant service, one for the Army Medical Department, and one for the Army Veterinary Department. We can imagine the pleasure and the benefit which the three brothers would derive from a comparison of views and experiences, and the advantage thereby accruing to the Army and to the State. We foresee also the improvement in tone and the advance to a higher social status which the veterinary profession will obtain by the introduction of the military element into the schools. The chances are that the aspirants for army honours will bring with them a certain refinement in speech and manners, in thought and feeling; and that this will act upon the more purely civilian and agricultural element and be reacted upon by that element to the benefit of both. When, further, an academic atmosphere is thrown round the whole thing there is no saying to what heights we may not attain, or at least aspire.

Whilst thanking His Majesty's Government for their dignified and kindly treatment of our profession, we must take the opportunity of expressing our disapproval of the course of conduct followed by, we regret to say, more than one Veterinary Society in this country in connection with the work of the Committee. Everybody knows that a Government Department is a machine whose working is slow and cumbrous. The recommendations of a Committee may give it an impetus, but even at the best the movement must, unfortunately, be slow, as so many wheels have to be actuated before the enormous engine can be so much as stirred. Yet some members of our profession have taken upon themselves the right to censure the War Office for its necessarily slow movements; they have been so arrogant as to express disbelief in *any* movement whatever, thereby implying a slur on the War Office Officials and on the Minister at its head; they have so far forgotten good manners, and even common decency as to utter taunts and even threats. Unfortunately they found a journal ready to subserve their purpose. Had Mr. Brodrick listened to these graceless utterances, and had he in consequence framed a much less generous

code, we should not have been at all surprised, however much we should have regretted his action. Had he, in the belief that persons who could write and speak thus were unworthy to be classed amongst officers and gentlemen, refused to give us the status which the new Warrant accords to us, we could scarcely have blamed him. Let us hope that a spirit of contrition now animates these unmannerly people, and that they will show by loyal co-operation with the Department how thoroughly they are ashamed of their former misbehaviour.

THE OPENING ADDRESSES AT THE VETERINARY COLLEGES.

WE make no apology for beginning with a notice of Sir Thomas Fraser's charming address delivered at the opening of our own College, for although he traverses the same ground as Professor M'Kendrick, and although Professor M'Kendrick treats his subject in an able and luminous manner, yet there is a certain grace and charm in the address of Sir Thomas Fraser which is not so strongly marked in the other. The very personality of Sir Thomas is attractive. The youngest student cannot but feel hushed into respectful silence when he comes into the presence of the man who, at the bidding of his Sovereign, went to distant India and braved the dangers of the horrible plague which was consuming the lives of so many thousands of our fellow-subjects. We all read, when we were at school, of the pestilential diseases or Black Deaths which spread gloom and terror over all Europe as they strode with pitiless footsteps from east to west, stopped only by the waves of the Atlantic, but devouring on their hideous progress rich and poor alike. Modern London bears even yet traces in its buildings of the ravages of the plague which visited it in the seventeenth century. Perhaps it was difficult for the young student to realise in the trim, black-coated, cultivated gentleman of the twentieth century the antitype of Saint Francis or Saint Martin, yet the difference is not so very great, and the spirit is the same.

Without affectation, and without waste of words, Sir Thomas told his audience that there is nothing to inspire terror, that there is very little mystery, in the Indian plague. Dirt and squalor are the fiends that beget it; sunlight and fresh air are its fiercest and most implacable enemies. All that our Indian friends have to do is to set their houses in order—open their windows and wash themselves and their clothes, and diligently remove everything that is comprehended in the term "dirt," and the plague will surely be stayed. It is the same story that is told in the Book of Kings about Naaman the Syrian, who was bidden by the prophet to wash himself seven times in Jordan—that is, an indefinite number of times—if he wished to get quit of his loathsome disease. Of course,

the simple, homely advice was rejected for the moment as being little short of an insult to the distinguished soldier, but was afterwards adopted, and proved quite successful. We have no doubt that the people of India expected to welcome in Sir Thomas Fraser a wonder-working magician who would call on his divinities and, by their potent aid, banish all disease in a trice; doubtless also, they were disgusted at his homely advice, and said to one another, "we could have done this ourselves," but it had never occurred to them to do it, and perhaps they found that the effort was greater than they anticipated, and further, let us hope that the moral benefit resulting from the discipline of cleanliness was as great as the physical.

Most charming is the frank recognition of equality granted by Sir Thomas. "Speaking as a practitioner in a co-related department of the healing art—if it be not, indeed, one and the same art." And again, "we who are your fellow-workers, dealing with the highest of all animals, have no reason to be dissatisfied with the progress that has been made or with the results that have been secured. It is for you to recognise that the lower animals are much the same in their vital reactions as human beings. . . . If in some directions we may at times be able to lend some assistance to the progress of veterinary science and practice, we are well repaid by the many gains we have acquired from your work." Further on Sir Thomas says, "It seems unnecessary for me to say more in order to show how close is the relationship between veterinary and human medicine. They may well be regarded as branches of one great subject . . . The progress of the one is beneficial to that of the other . . . I am not sure that either branch of the great healing profession is taking its proper share in this endeavour [that is, in observation and research]. . . . Something, no doubt, is being done by the veterinary profession." All this is in refreshing contrast to the spiteful and silly comments of a writer in the *British Medical Journal* of 17th October. We earnestly commend Sir Thomas Fraser's words to the attention of our readers. There is much more in his address than appears at a first reading.

Professor M'Kendrick's address, whilst not so idealistic as Sir Thomas Fraser's, is in its own practical way equally interesting and important. It is full of information, and, at the present time, so pregnant with events that may prove disastrous to our profession or beneficent, will be read and studied with avidity. Professor M'Kendrick gives very detailed statements regarding the Dick Bequest and Mr. M'Callum's gift, and provides those of us who are interested in education with facts gleaned from many Continental fields of veterinary study. It is very desirable that veterinary surgeons in all parts of the country should acquaint themselves with the facts so fully and so lucidly presented by Professor M'Kendrick, as they may be called upon before very long to give their votes one way or the other in the contests that may possibly

be impending. We say this in all sincerity and humility, and with an ardent desire for peace, and for the prosperity of our profession; but we clearly discern the cloud on the horizon, at present no bigger than a man's hand, which may yet bode a storm of no small violence. When elemental forces such as universities, municipalities, testators, Royal Colleges, and givers of gifts, are abroad, we may look at any time for electrical disturbances. It is true, thunderstorms sometimes clear the atmosphere, but they sometimes bring destruction in the most unlikely places.

On the ethics of education and of scientific training no one can speak with greater power or more eloquently than Professor M'Kendrick, and we must urge all the younger members of the profession at least to read and re-read, and learn off by heart, the fervent passage in which Professor M'Kendrick invites them to enter upon the sacred enclosures of scientific truth. It is somewhat remarkable that words of the same earnest import were used about the same time, or a little later, by the German Emperor in an exhortation to his sons when preparing for Confirmation. May we remind our readers that His Imperial Majesty pointed out to the young people that, as in the parable of the talents, the heaviest punishment falls upon the man who sits still and lets other people work for him.

When Dr. M'Kendrick passes to the economics of his case he is no less convincing. All that he says about the value of our flocks and herds is quite demonstrably true, and in these times of fiscal disturbance deserves the very closest attention—more attention than it will probably ever get. It follows, of course, that as more care is given to the cultivation of our internal resources so more importance will be attached to the work of the veterinary surgeon. We cannot but think that the British farmer in neglecting us has been neglecting his best friends; had he been less jealous and less envious of his Continental rivals, and more intent on improving his methods—always, of course, under our advice and supervision—there would be less agricultural distress at the present time and less need for artificial remedies of doubtful value.

Professor M'Kendrick is as free from snobbish vanity as Sir Thomas Fraser. He recognises the identity of the work done by veterinarians, and by those who have the curing of disease amongst men. It is useless to quote sentences from his address; the reader must study it diligently for himself, thank God, and take courage.

We have not space to review at length the address of Mr. Colquhoun at Glasgow. It is—may we venture to say?—a little crude, somewhat jejune in fact. The speaker begins with an appeal on behalf of the strenuous life, with a call to his hearers to despise wealth and devote themselves to pure study. He calls for prayer and fasting, he poses as the ascetic; but as he advances he sees the futility of his advice and, like the old Hebrews, longs for the fleshpots of Egypt. He ends with a piteous appeal for wealth.

EDITORIAL NOTE.

WE desire to impress upon the minds of some of our contributors that a delay, even if considerable, in the publication of a paper does not imply that, in the opinion of the editor, it is deficient in merit. Literary contributions are bound to accumulate to an extent which the small amount of space in a journal like the VETERINARY JOURNAL can only gradually cope with. Indeed, unless they did so accumulate, it would become impossible to carry on the paper. Further, many considerations other than those of receipt or assumed comparative merit, determine the date of publication. Length, subject, current interest, to some extent the locality from which the writer hails, are all factors which have to be taken into consideration. It would, for instance, be manifestly unwise to insert too many papers of the same class or on the same subject at one time or in immediate succession. Neither would it be advisable to fill a number with one or two long papers, however valuable they might be. Our contributors may rest assured that, unless they are notified that a paper is considered unsuitable for our columns, it will appear in due course.

ARMY ORDER.

SPECIAL.

WAR OFFICE, *9th October* 1903.

THE following Royal Warrant is promulgated to the Army with the approval of the Secretary of State for War :—

ROYAL WARRANT.

ARMY VETERINARY SERVICE.

Edward R.I.—Whereas we deem it expedient to amend the regulations relating to the promotion, pay, and non-effective pay of officers of our Army Veterinary Department ;

Our will and pleasure is that the Warrant of Her late Majesty, Queen Victoria, dated the 26th October 1900, as amended by our Warrant dated 20th March 1902, shall be further amended in accordance with the following provisions :—

RANK.

1. Article 319 shall be cancelled, and the substantive ranks of officers of our Army Veterinary Department shall in future be as follows :—

Colonel, lieutenant-colonel, major, captain, and lieutenant.

The following shall be inserted in Article 320 :—

As major-general—Colonel holding the appointment of director-general, Army Veterinary Department.

GENERAL RULES FOR APPOINTMENT AND PROMOTION.

2. In Article 327, *after* "In cases of distinguished service in the field a

departmental officer," *insert* "except an officer of our Army Veterinary Department."

APPOINTMENT AND PROMOTION.

3. In Article 431 *substitute* "lieutenant" *for* "veterinary-lieutenant."

4. The following shall be substituted for Articles 434 to 436 :—

434. A lieutenant shall be eligible for promotion to the rank of captain on completing five years' commissioned service, provided that he has previously qualified in such manner as may be prescribed by our Secretary of State.

435. A captain shall be eligible for promotion to the rank of major on completing ten years' service in the rank of captain, *or if he joined the department before the* 5th October 1898, *on completing fifteen years' total service*, provided that he has served three years abroad and has previously qualified in such manner as may be prescribed by our Secretary of State.

An officer who was promoted to the rank of veterinary-captain for distinguished service before the date of this our Warrant shall, however, be eligible for promotion to the rank of major when the officer next below him becomes eligible by length of service for such promotion.

436. Promotion to the rank of lieutenant-colonel shall be made by selection from majors, of not less than fifteen years' service, who have served at least three years in India, and have previously qualified in such manner as may be prescribed by our Secretary of State.

437. Promotion to the rank of colonel shall be made by selection from lieutenant-colonels who have served five years in that rank.

RETENTION BEYOND AGE FIXED FOR RETIREMENT.

5. Article 438 shall be cancelled.

BREVET RANK.

6. The following new Article 438 shall be inserted :—

438. An officer of our Army Veterinary Department shall be eligible for promotion to brevet rank under the conditions laid down in Article 36.[1]

PAY AND CHARGE PAY.

7. The following shall be substituted for Article 439 :—

439. The following shall be the rates of pay and charge pay of our Army Veterinary Department :—

Pay.

Director-General,	£1200 a year,	Inclusive of all allowances, except field and travelling allowances.
Deputy Director-General,	800 „	

	Daily.
Colonel,	£1 15 0
Lieutenant-colonel,	1 10 0

[1] *Secretary of State's Instructions.*—Distinction in original investigation or research may, in the case of an officer of the Army Veterinary Department, be regarded as "distinguished service of an exceptional nature other than in the field," within the meaning of Article 36.

	Daily.
Major,	£1 0 0
After 5 years' service as such,	1 2 0
„ 10 „ „ „	1 4 0
Captain,	0 15 6
After 5 years' service as such, provided he has served 3 years abroad,	0 17 6
Lieutenant,	£250 a-year.

A captain of our Army Veterinary Department holding the brevet rank of major shall receive 2s. a day in addition to the rates laid down for a captain above.

Charge Pay.

With an army in the field—

The senior veterinary officer—a rate to be fixed by the Secretary of State according to the magnitude of the charge.

In a command abroad—

The senior veterinary officer in charge of mounted troops of our Regular Forces, if the total number of animals attached to the troops is 1500 or upwards, . . 5s daily.

In a command at home—

The veterinary officers employed with the Army Remount and Registration Establishment, . . . 5s. daily.

HALF PAY.

8. The following shall be substituted for Article 480 :—

	Daily.
Colonel,	£1 5 0
Lieutenant-colonel,	0 17 6
After 25 years' service,	0 19 0
„ 30 „	1 1 0
Major or captain,	0 8 6
After 15 years' service,	0 10 6
„ 20 „	0 13 0
„ 25 „	0 16 0
Lieutenant,	0 4 0
After 5 years' service	0 7 0

RETIREMENT AND RETIRED PAY.

9. The following shall be substituted for Articles 585 to 589 :—

585 (a.) *Voluntary Retirement.*

Scale of Retired Pay.

Colonel,	after 30 years' service,	£500 yearly.
Lieutenant-colonel,	„ 20 „	365 „
„	„ 25 „	400 „
„	„ 30 „	450 „
Major,	„ 20 „	300 „
„	„ 25 „	365 „
Captain,	„ 20 „	250 „

An officer of any rank, after 10 years' service, but less than 20 years' service, ... £1000 gratuity.

An officer of our Army Veterinary Department who, on voluntary retirement, has served for less than three years in the rank from which he retires, shall only be entitled to the retired pay assigned to the next lower rank.

(b.) *Retirement on Account of Age, or Limitation of Period of Service.*

Conditions of Retirement.

586. The Director-General shall, unless his service has been specially extended under Article 433, retire on completion of three years' service as such; the retirement of colonels shall be compulsory at the age of fifty-seven, of lieutenant-colonels at the age of fifty-five, and of majors at the age of fifty-five, or after twenty-eight years' service if they have previously been passed over for promotion to lieutenant-colonel, or as soon after attaining twenty-eight years' service as they may be so passed over, provided that in no case shall they serve beyond the age of fifty-five.

587 *Scale of Retired Pay.*

Director-General, Army Veterinary Department,				£700	0	0 a year.
Colonel, after 30 years' service,				500	0	0 „
Lieutenant-Colonel after 20 years' service,				365	0	0 „
„	„	25	„	400	0	0 „
„	„	30	„	450	0	0 „
Major	„	15	„	0	10	6 a day.
„	„	20	„	300	0	0 a year.
„	„	25	„	365	0	0 „
Captain,	„	10	„	0	8	6 a day
„	„	15	„	0	10	6 „
„	„	20	„	250	0	0 a year.

(c.) *Retirement on Account of Medical Unfitness.*

Conditions of Retirement.

588. An officer of our Army Veterinary Department placed on the half-pay list on account of medical unfitness shall, if not previously retired on account of age, be retired from our Army at the expiration of five years from the date on which he was placed on the half-pay list, or, if reported by the regulated medical authority to be permanently unfit for duty, on the officer's application, at such earlier date as may be decided by our Secretary of State.

Scale of Retired Pay.

589. Officers with at least ten years' service—

Medical Unfitness caused by Military Service.—The rates laid down in article 587.

Medical Unfitness not caused by Military Service.—The rates laid down in article 585.

Officers with less than ten years' service—

Medical Unfitness caused by Military Service.

Under 5 years' service, 4s. a-day.
After 5 years' service, 7s. a-day, or a gratuity at the rate mentioned below.

Medical Unfitness not caused by Military Service.

After 5 years' service, a gratuity of £100 for each completed year of service.

It is our further will and pleasure that the non-commissioned officers and men employed on army veterinary services shall be formed into a corps, to be designated the "Army Veterinary Corps," and shall be granted pay at the following daily rates:—

	s.	d.
Farrier-quarter-master-sergeant,	5	0
Staff-sergeant-farrier,	4	0
Farrier-sergeant,	3	6
Shoeing-smith-corporal,	2	6
Shoeing-smith,	2	0
Private,	1	2

Given at our Court at Balmoral, this 5th day of October 1903, in the 3rd year of our Reign.

By His Majesty's Command,

ST. JOHN BRODRICK.
ROBERTS, F.M.
Commander-in-Chief.

No. 2703—I. A.

GOVERNMENT OF INDIA—FOREIGN DEPARTMENT.

NOTIFICATION.

SIMLA, *the 12th June* 1903.

The Governor-General in Council is pleased to make the following rules regarding the remuneration of veterinary officers for veterinary services rendered to or for native chiefs and nobles and native gentlemen of high position in a native state:—

1. When a native chief or noble or gentleman of high position desires the professional assistance of any veterinary officer in military employ, the latter will be at liberty to render it, provided that the due performance of his ordinary duties is not affected thereby. The special permission of the inspecting veterinary officer of the command will, however, be necessary when such assistance involves the absence of the officer from his duties for any substantial time.

2. The native chief, noble, or gentleman may offer any veterinary officer of government employed by him such fee as he thinks fit. The offer made will be reported by the veterinary officer through the political agent or other officer of government exercising political functions in the state of which the said chief, noble, or gentleman is a resident, for the consideration of the local government within whose jurisdiction the native state is situated. In reporting the offer, the veterinary officer will state the nature and extent of the professional assistance afforded, and the circumstances in which he rendered it. The political agent or officer forwarding the report will submit it with such remarks as he may consider necessary. The local government is required to satisfy itself that the fee proposed is

not out of proportion to the assistance afforded and to the circumstances of the case, and has authority to sanction the acceptance of a fee not exceeding Rs. 1000.

If the proposed fee exceeds this sum, the matter will be submitted with a full report by the local government for the consideration and orders of the Government of India.

3. The report prescribed in the preceding paragraph will not be required from a veterinary officer when the fee does not exceed Rs. 16 a visit (exclusive of travelling expenses) for each anima attended, or Rs. 1000 in the aggregate for repeated visits in the course of a year.

4. Rules 2 and 3 apply to an officer of the Civil Veterinary Department who has been permitted by the local government to render professional assistance to a native chief or noble or gentleman.

L. W. DANE,
Secretary to the Government of India.

No. 2891—I. A.

A copy of the foregoing notification is forwarded to the Military Department for information and guidance.

By order, &c.

E. V. GABRIEL,
Asst. Secy. to the Govt. of India.

FOREIGN DEPARTMENT, SIMLA,
the 20th June 1903.

No. 3491—D.

Copy of the above forwarded for information and guidance to :—

The Adjutant-General in India and for favour of communication to all veterinary officers serving under the orders of His Excellency the Commander-in-Chief.

The Director-General, Army Remount Department.

By order, &c.

H. H. F. TURNER,
for Depy. Secy. to the Govt. of India.

MILITARY DEPARTMENT, SIMLA,
the 8th July 1903.

New Veterinary College, Edinburgh.

OPENING ADDRESS BY PROFESSOR SIR T. R. FRASER, LL.D. EDINBURGH UNIVERSITY.

SIR LEWIS M'IVER'S EXPERIENCES.

THE Thirtieth Session of the New Veterinary College, Edinburgh, was opened on the afternoon of Wednesday, 7th October, with an introductory address by Professor Sir Thos. R. Fraser, Vice-President of the Royal College of Physicians. Sir Lewis M'Iver, Bart., M.P., presided over a large attendance of ladies and gentlemen, among whom members of the veterinary profession, agriculturists and students predominated.

Sir LEWIS M'IVER, in opening the proceedings, said he had to thank the governing body for doing him the honour of asking him to preside on that occasion. He had to confess to sublime ignorance of those professional questions which interested the students most closely. At the same time he could claim a large personal acquaintance with members of the honourable profession which they proposed to join. He had to acknowledge that he owed his life to the unauthorised interference of a veterinary surgeon with a disease which did not come immediately within the purview of his own profession. That was to say, he had treated him for one of those forms of tropical disease similar to yellow fever. Of course it was an infringement of what was called professional etiquette. The veterinary surgeon did wrong; he ought to have let him die—(laughter)—and perhaps the world would have been none the poorer. (Renewed laughter.) There was no doubt that the veterinary profession in the past did not receive that degree of regard and social status which its usefulness in the world entitled it to get. The demands of the empire, spreading by leaps and bounds, had, however, given a new importance to the profession, and there was a desire for increased scientific attainments by veterinary professors. They might have seen in the newspapers a report by the repatriation officer in South Africa, which stated that in his department alone there had been lost nearly £400,000 worth of animals through diseases of various sorts. He did not say that veterinary science could have saved all these animals, but, at any rate, science on the spot might have preserved a very large proportion. Another sign of the times was the announcement that the Veterinary Department in the War Office was about to receive the recognition it had so long sought. (Applause.) Like doctors of the other branch, they were to obtain combatant rank, and a Royal Warrant would shortly be issued conferring that upon them, with increased advantages in the form of pay and other emoluments. There could be little doubt in men's minds that the more consideration that was given to a profession the more likely was it to enhance the dignity of that profession, and that was bound to react with advantage to the men themselves and to the public which they served. (Applause.) The only claim he had to any knowledge of the veterinary profession was that he once performed the operation of tracheotomy on a missionary's horse. (Laughter.) He used a pruning knife and the "stroop" of a watering-pot, and the only antiseptics he employed were sand-paper to the knife, and carbolic acid, in which he dipped the stroop. He believed that the reverend missionary was still alive, but he knew the horse died. (Laughter.) Of course such things would happen even with a more adequate equipment of veterinary knowledge than he possessed. He would be glad to recall successes on the other hand, but they did not exist. (Laughter.) He wanted to point out, not to those who had gone through part of their course, but to those who were only just joining, to remember that they were entering an institution which reflected infinite credit upon the country, which stood extremely high in the estimation of those who could judge of the qualifications of veterinary surgeons, and to recall to them the fact that it was presided over by one of a family which had testified through so many generations its devotion to the development of the science they were about to study. (Applause.) In calling upon Sir Thomas Fraser, he expressed satisfaction at this recognition by the medical of the veterinary profession, and at the

linking together of the two sciences which the Professor's presence implied. (Applause.)

Sir T. R. FRASER then delivered his opening address. He said,—I have much pleasure in appearing before you, on the invitation of your Principal, to participate in so interesting an event as the opening of a new session. My function, I have been informed by Principal Williams, is to make a few, and only a few, observations on the subject of the studies that are carried on in this College, and on the work of your profession.

In doing so, I realise that I have before me men who are about to commence, or have already proceeded some way in these studies, as well as others who have completed them and are now engaged in the work of the profession for which they have qualified themselves.

The former I would ask to retain those high ideals and expectations with which, I trust, they regard the future, and by which only, can they succeed in emulating the successes of the large number of their predecessors, who have brought much credit to this College by gaining so many of the Fitzwygram prizes, in competition with students of all the veterinary colleges of Great Britain. You have much steady and laborious work before you. You cannot too early realise that each branch of study is an essential foundation for advance in knowledge; for, however obscure may be the apprehension of the bearing upon practical work of such subjects as chemistry and physics and biology, it is only after they have been mastered that the complicated problems of diagnosis and treatment can be fully comprehended. Each subject forms a necessary foundation for that which follows. Thus is physics related to chemistry and anatomy, and chemistry and biology to physiology, and physiology to pathology, and both the last in their turn to therapeutics in its widest sense, including not only surgical measures and the employment of medicinal substances, but also every agency which can be used to cure disease or to prevent the occurrence of disease.

A large proportion of these latter agencies are grouped together to form an important part of the subject of hygiene. Speaking as a practitioner in a co-related department of the healing art—if it be not, indeed, one and the same art—and being necessarily familiar with some of the progress that has been made, I am persuaded that no subject dealing with the prevention and treatment of disease in man, has advanced so rapidly as the subject of hygiene.

Only a few years ago it spoke with a humble voice, and dealt too often with generalities. Now it speaks with no uncertain sound. Parkes and Simon and Farr, not to mention others abroad, have enriched it with facts, pregnant with applications of benefit to the community. Its teachings have become so apparent that even the slowly moving public opinion has now absorbed many of them, and, with the aid of the legislature, has so successfully applied them that the death-rate of the country has been materially lowered, while some diseases, including tubercle, have ceased to be the scourge of man and the lower animals in several localities and towns where they were formerly prevalent. This it has done by such simple measures as the supplying of pure water and a sufficiency of air and sunlight. So, also, by these measures a great advance has been made in the lessening of disease and the tendencies to disease among the poorest and most helpless members of the community, and the first step has been taken

in arresting the physical decadence, whose existence in the artisan and wage-earning section of the population has only too apparently been proved by a recent Commission. It is not, however, only by causing an improvement in general health that the advance of hygiene has become manifest. An even more definite and measurable influence has been exerted by it on many zymotic or microbean diseases, such as typhus and typhoid fevers; but perhaps one of the most striking examples of its great importance as a regulating influence in the prevalence and fatality of disease is furnished by the pestilence—plague. This pestilence has existed from the earliest times as a devastating scourge of mankind, having no respect for race or geographical position or climatic conditions. It has disappeared from those countries which have emerged from the barbarism and insanitary conditions; but it still remains an ever-present epidemic in several oriental countries which retain the insanitary habits and customs and modes of life which formerly were everywhere prevalent. As the experience of India has shown and is yet showing, if it be introduced into a country in which the requirements of hygiene have not received adequate recognition and application, it will there reassert its devastating power. From small beginnings in the city of Bombay, it has extended throughout India, until every presidency and province has become affected. In the Bombay Presidency, from 1896 to 1900, its victims numbered 400,000, of whom 350,000 died of the disease, giving a case mortality of 78.5 per cent., and in the city of Bombay itself 80,000 persons were attacked in this period, with a case mortality of 85 per cent. In Calcutta, the case mortality was even higher, as nearly every one who was attacked perished, the mortality varying in each of three years from 90 per cent. to 94 per cent. The condition of the sanitary arrangements in the native houses can scarcely be imagined by anyone who has not had an opportunity of observing it. The houses are practically unventilated, their chambers are dark, and the light of the sun cannot enter them, while over-crowding is prevalent in its most extreme degree. The large incidence and mortality occurred only among the inhabitants of these dwellings. Car-drivers, policemen, scavengers, and other natives in the employment of corporations, who were provided with houses constructed on moderately good hygienic principles, have scarcely at all suffered, although from the nature of their occupations they were being constantly exposed to infection. Natives from these unlit and unventilated hovels, who were permitted to attend relatives and friends suffering from plague removed to airy and well lit hospitals, scarcely ever became affected in these hospitals, although they slept beside and nursed their plague-affected relatives, both day and night. And again, Europeans who, with the fortitude which was to be expected, often came into close contact with plague patients, attending them in hospitals and even assisting in removing patients or dead bodies from dwelling-houses, suffered but seldom from plague, and the case mortality among them was so low as 29 per cent. Their dwellings, however, were similar to the usual residences of Europeans in this country. Although the history of plague epidemics had already shown that this disease respects no race, and that this striking difference in incidence and mortality between natives and Europeans cannot therefore be referred to racial immunity, it is most instructive to recall that in a portion of the time when India has been suffering from plague, the disease was introduced and gained, before it was discovered, a certain

footing in the city of Glasgow. I had an opportunity of visiting the houses and districts in Glasgow where these cases occurred, and although they were reported to be the worst districts and houses, from the hygienic and other standpoints in that city, they compared most favourably with the houses I have referred to in India, for in no case were tolerably pure air and light unprovided, and overcrowding, if it existed at all, was present to only a moderate extent. The result of this attention to hygienic requirements has been that the disease spread to a very limited extent in Glasgow, and above all, that the case mortality was only 28 per cent., or almost the same as that of the Europeans who inhabited sufficiently ventilated and lighted houses in India. I do not wish to dwell too long on this example of the benefits of attention to even the most elementary of hygienic requirements, but I am tempted to add that in Glasgow, as in India, the rats became affected with plague, and, indeed, continued to be affected for months after the last case had occurred in human beings, and still the outbreak did not extend, but remained only an unimportant one.

Therefore it is that I am glad to observe in the programme of instruction in this College that hygiene is accorded a definite and, I trust, an important place. The suspicion is present in my mind that its requirements are not always sufficiently enforced in veterinary practice, not only when disease is present, but also, and with the possibilities of more valuable results, in the ordinary management of domesticated animals. The idea has become perhaps too prevalent that the removal of that which we call "filth" is the most important and perhaps even the sole function of sanitation. It is no doubt important; but even when filth is present a large number of diseases are deprived of their hurtful effects if proper food and sunlight and air are supplied; and when it is absent, disease-processes will nevertheless acquire an increased virulence if these elementary and, therefore, even more important requirements of health are absent or defective. I recognise that, however thoroughly you may become indoctrinated in the lessons of your instructors in hygiene, you have to deal with much deeply-rooted prejudice and want of information, and that the responsibility does not altogether rest on your shoulders of the numerous examples spread over the country of stables and byres in which the elements of hygiene are grossly neglected, not perhaps so much in regard to filth-impurity as to freedom of access of air and light.

We who are your fellow-workers, dealing with the highest of all animals, have no reason to be dissatisfied with the progress that has been made or with the results that have been secured. It is for you to recognise that the lower animals are much the same in their vital reactions as human beings, and that in accordance with structural similarities their vital processes are essentially of the same kind.

If in some directions we may at times be able to lend some assistance to the progress of veterinary science and practice, we are well repaid by the many gains we have acquired from your work and from the animals with which you deal. The progress of knowledge regarding human life and the diseases of human beings and their treatment owes much to investigations in the lower animals. Physiology has almost entirely been constructed on these investigations. To a nearly equal degree is pathology indebted to them. Many diseases are found to be common to man and the lower animals, and we should be poor indeed in our knowledge

were we to neglect the manifestations of these diseases in the lower animals. To no affections does this more emphatically apply than to cancer and tetanus and tuberculosis. In the last, co-operation has already proved beneficial, and further co-operation promises to lead to the eradication of this common foe of mankind and of many of the lower animals. Many other examples might be adduced, but I shall instance only the light which has recently been thrown upon the production of the "sleeping sickness" of tropical Africa by the study of the effects of the trypanosoma parasite on man and certain of the lower animals.

There remains the important subject of pharmacology which deals with those changes from normal or physiological which are produced by medicines. By providing us with guidance in restoring diseased processes to a healthy condition it has become the most trustworthy foundation for the treatment of diseases, or therapeutics. It has been almost entirely evolved and constructed from observations made in the lower animals. By these observations the effects on the living organism of the secretions of glands, for example, have been determined, and the treatment of disease has been enriched by the addition to the Materia Medica of many of the glands of the lower animals and of preparations derived from them. Thus is the formidable and until recently incurable disease, myxa-dema, now certainly cured by the thyroid gland of the sheep; and hæmorrhages, both external and internal, are staunched, and life, in many cases, is sustained by the administration of the supra-renal capsules of many of the lower animals; while the ox and the sheep, in their bone-marrow, provide one of the remedies for prolonging life in the otherwise progressively fatal, pernicious form of anæmia.

In the favouring conditions of the blood of many lower animals, also, the antidotes for numerous pathogenic organisms and poisons are produced or separated; and the treatment and prevention of disease in man has thereby gained priceless acquisitions. Smallpox has been almost eradicated where the vaccine matter derived from the heifer has been adequately used as a prophylactic; diphtheria has been robbed of its terrors by the diphtheria antitoxin produced in the horse; hydrophobia may now be cured by the administration of the spinal cord of immuned rabbits; the only efficacious remedy for tetanus is found in blood-serum of animals to which a succession of doses of tetanus virus has been administered; and, by a similar process, an antidote for snake-bite and the bite of other venomous creatures has been prepared in the bodies of horses and dogs and rabbits.

It seems unnecessary for me to say more in order to show how close is the relationship between veterinary and human medicine. They may well be regarded as branches of one great subject. They deal with life in all its manifestations and in all its departures from healthy conditions, whether in man or in the lower animals. The progress of the one is beneficial to that of the other. I venture to ask how is this progress to be hastened? The unambiguous reply must be by patient observation and research, so that new facts may be obtained, beneficial to man and beneficial to those animals in which the veterinary profession is more particularly interested. I am not sure that either branch of the great healing profession is taking its proper share in this endeavour. Something no doubt is being done in the veterinary profession, and it is sufficient to appeal to the work of

Toussaint and Chauveau, of Lyons, in connection with anthrax and vaccine matter, of Macfadyen on the typhoid antitoxin, and of the founder and late Principal of this College, the father of the present respected Principal, on the transmission of disease-organisms by insects.

The amount of work is, however, only small, and the number of works is altogether insignificant. As in the branch of medicine which I represent, many difficulties have to be overcome, but in that branch conviction at least has been formed, and more than the first steps have been taken to develop investigation. It is not less important that progress should be made in the knowledge of the problems of life and disease and of the treatment of disease in the lower animals. Men are required who will not be content with the mere acquisition of already obtained knowledge, but who will devote a short period, at any rate, of their lives to this higher education. Laboratories and appliances for research are required in each centre of veterinary education—not only for teaching—which, after all, serves only an elementary and relatively subsidiary purpose—but much more for increasing knowledge by patient, devoted, and intelligent work. In accordance with the success with which this is done will the veterinary profession advance its position and gain the esteem and respect of the public. It is to the younger generation that the veterinary profession must chiefly look for this service. For this purpose their studies should be diligently pursued, for it is only after existing knowledge has been acquired that a sufficient elevation will be gained, from which can be seen the hills and mountain ranges that have not yet been ascended, and whose ascent can be accomplished only by those who have previously undergone a careful and laborious training.

Gentlemen, in concluding these few remarks, it remains for me most cordially to wish you much success in the studies of this new session, and much satisfaction in the work of the profession which your studies will prepare you to engage in. (Applause.)

Mr. W. Woods, F.R.C.V.S., proposed a vote of thanks to Sir Thomas Fraser for his able address—an address which, he said, appealed as much or more to those present who held their diploma, as to the student or those just entering college. It might almost frighten some of those who had only that day for the first time entered the institution, but it need not do so, for they would have teachers who would gradually instil into their minds that scientific knowledge which would lead up to a thorough appreciation of the subject Sir Thomas Fraser had been dealing with. There was no doubt that Sir Thomas had put his finger on a weak spot in mentioning the bad sanitary conditions that existed in cowsheds and stables, and he had suggested that the profession should pay more attention to this. The veterinary profession were aware of the great advantages of hygiene. They had been proclaiming the great advantages of sunlight and fresh air, but he was afraid they would never educate people up to it. Education could not prevent overcrowding in dwellings. Nothing but legislation prevented that, and nothing but legislation would procure good sanitary conditions for the lower animals. Sir Thomas would be pleased to know that throughout the country, legislation was doing its work. Many of them remembered the old cowshed with the door at one end and a hole at the other, which supplied all the light, ventilation, and drainage these cowsheds had. That was now a thing of the past, and every new cowshed had to conform to certain laws, which had been laid down with the

aid of the Local Government Board. (Hear, hear.) Sir Thomas Fraser had mentioned very modestly the subject of snake bites. Probably they did not know that Sir Thomas Fraser was the author,—the discoverer of the antitoxin treatment in these cases—and it might further interest some to know that that College had assisted him considerably in making his investigations. (Applause.)

Sir THOMAS FRASER in returning thanks, said he was personally under very considerable obligation to the veterinary profession as typefied in that College, for the researches which had been referred to had been conducted in that institution with the assistance of Principal Williams. (Applause.)

Principal WILLIAMS in proposing a vote of thanks to Sir Lewis M'Iver for presiding on the occasion of the opening of the Thirtieth Session of the College, said he would take the opportunity of drifting into a speech of his own, which, however, he assured them would only occupy several minutes. He should like to say—and he knew that young students would be inclined to jeer at him—he should like to say, that he envied the students who were now commencing their College careers. Until now the only thing that was obtainable by veterinary students was the Diploma of the Royal College of Veterinary Surgeons, a knowledge of the diseases that exist in this country, and probably a paper knowledge of diseases in other parts of the world. This country sent administrators to its colonies. It sent out leaders in the military world—colonels, captains, and commanders—to lead the native forces in the defence of their country and in pursuit of their enemies. But they had never had an opportunity of learning how to defend the colonies from the innovation of their greater foes—the various contagious diseases. But the student of to-day, not only can he obtain the Diploma of the Royal College of Veterinary Surgeons, but he would have within the next twelve months various universities thrown open to him, so that he might obtain, in addition to his licence to practice as a veterinary surgeon, his university degree. He would then go forth hall-marked by the Royal College of Veterinary Surgeons as a fully qualified man, and he would be hall-marked also by the university as a man of letters. Such a man was bound to be sought after, and was now being sought after at home and abroad. Such men he ventured to say would become as invaluable to this country as Lord Kitchener or Lord Roberts. He would further point out another advantage which the veterinary student of the future would have, and that was the opportunity of attending a special course now being given at Liverpool in the School of Tropical Medicine. They had determined to give a special course of tropical veterinary medicine, so that the colleges would be able to send out men not with a paper knowledge only, but with a practical knowledge of the diseases devastating our colonies. Sir Lewis M'Iver had mentioned that £400,000 worth of animals had been lost by disease, as stated in a report from South Africa, but they should not be surprised to learn that altogether five or ten millions worth of stock had been lost in that war, and all that was due to the lack of a properly qualified veterinary staff before and during the war. There was another advantage which the student of the future and all of them would share in, and that was that the Army Veterinary Department was now going to be placed on its proper footing. Members of that department would no longer be officers in name merely of His Majesty's Army, but would be officers in fact, and officers with authority and com-

mand. (Applause.) It was rather humiliating for a man in a fairly good social position to have to say of his brethren in the Army Veterinary Department, "they are officers of a kind," and not be able to say that they were equal to the other officers of the Army. A notice that appeared a few days ago announced the fact that a Royal Warrant would soon be promulgated giving effect to the reforms he had outlined. (Applause.) He concluded by proposing a hearty vote of thanks to the esteemed and highly respected member for West Edinburgh, Sir Lewis M'Iver. (Loud Applause.)

Sir LEWIS M'IVER in reply acknowledged the benefits he had received from the afternoon's proceedings, and added that it was perhaps as well he did not know at the outset that the subject of investigations into snake poisons would come up, as he was probably the only person present with a real snake story, and he might have inflicted it upon them. (Laughter.)

This concluded the proceedings.

Glasgow Veterinary College.

INTRODUCTORY ADDRESS.

DELIVERED BY WALTER COLQUHOUN, M.A., M.B., C.M., MUIRHEAD DEMONSTRATOR, AND SENIOR ASSISTANT TO THE PROFESSOR OF PHYSIOLOGY, GLASGOW UNIVERSITY.

MR. PRINCIPAL AND GENTLEMEN,—When I was asked to address you at the beginning of your session, I felt myself so honoured that I am afraid I accepted the task somewhat rashly. I can lecture quite easily to my students day after day, because I have a definite subject, a definite amount of work to cover, and the students are presumably at the same stage of advancement. On thinking over my address to you, the difficulty was to find a subject. I felt that, if I should choose a branch of some science, I would run the risk of boring the junior students by being too abstruse, or the seniors by being too elementary. Being thus in a quandary, I asked myself the question—"What would the gentlemen like to know?" I am ashamed to tell you the answer which presented itself, and I hope that it will not offend you. The answer was, "Living, as they do, in the twentieth century, they probably wish to know how to make money." Gentlemen, I have never managed to make money, and on that point I have to refer you to Mr. Carnegie's speeches. He preaches continually, "Study, improve your mind, and you will better your position in the world, and possibly become, even as myself, a millionaire." I also say to you, gentlemen, "Study and improve your minds," because I know that if you become real students, thoroughly imbued with a desire for truth, very few of you will make money, and further, that, if any of you should perchance make money, you will consider yourselves well repaid if you should find one truth at the cost of spending it to the last penny. I have much respect for Mr. Carnegie, because I recognise that he has progressed considerably beyond his environment, but he would have to live another hundred years before he could comprehend the academic or

the scientific view of the scramble called Life, or the attitude which caused Mark Akenside, a physician of the eighteenth century, to write—

> Raise me above the vulgar's breath,
> Pursuit of fortune, fear of death,
> And all in life that's mean;
> Still true to reason be my plan,
> Still let my actions speak the man
> Through every varied scene."

It is said that Pythagoras, when he discovered the 47th proposition of the first book of Euclid, which you will remember proves that the square on the hypotenuse of a right-angled triangle is equal to the sum of the squares on its sides, offered up a sacrifice of one hundred oxen to the Muses, humbly deeming that such a discovery, of which he saw the far-reaching results, was beyond mere human effort.

When Archimedes, buoyed up by the water of his bath, suddenly thought of how to distinguish substances by their specific gravity, he rushed from the bath, unclothed, crying "Eureka"—I have found it out.

To come to later times: You all know the difficulty the older histologists had in cutting thin sections suitable for examination under the microscope. Their methods of hardening the tissues were defective, and they embedded them in carrot, or elder pith, or in amyloid liver, or similar substances, and cut sections by hand. You can imagine the difficulty they had with soft nervous tissue! On January 25th, 1842, a great neurologist of the name of Stilling, left one night a piece of spinal cord on his window-sill during a hard frost. In the morning he found it frozen quite hard, and, being in the habit of making sections of what happened to be in his hand, he made a transverse section through it in the frozen condition, and examined the section under a magnification of 15 diameters. He wrote—

"When I saw the magnificent radiating bundles, and the central tracts of nerves, I realised that I had discovered the key that would open up the chambers of the wonderful structure of the spinal cord. Not more gladly did Archimedes call out his 'Eureka,' than did I shout out on beholding that sight."

At the present time every student can examine sections of the spinal cord, made with the freezing microtome, under a power of at least three hundred diameters. I have given you a few glimpses into the minds of true students—searchers after truth—at the moment of the fruition of their search.

Do you think for a moment that such men would have been moved in the least by the doctrine which is now being preached to the youth of the country? Had I the time at my disposal, I could bring forward a long record of scientists who have beggared themselves and their families in search of truth; of preachers who have chosen poverty, and even death, in support of what they deemed the right; of doctors who have sacrificed themselves for their poorest patients; of noble leaders who have sacrificed everything for the cause they supported. Many of the epoch-making discoveries of our patient searchers after truth, worth tens of millions of pounds to the world, have left the discoverers in comparative poverty; and yet, if we hear their voices raised in complaint, it is because their beloved sciences do not receive sufficient support, and that the progress of science is thus retarded.

You are wondering, no doubt, gentlemen, what my address, so far, has had to do with veterinary science. I am coming to the point. You are preparing yourselves to enter a profession which, as I will demonstrate before the end of my address, will afford you great facilities for advancing scientific knowledge, more especially in connection with medical science. Each of you has a choice of two courses open to you. You can grind up your work, pass your examinations, then lay aside your books, and without any further mental strain, devote your time to forming connections in pursuit of the half-crown, treating your patients by rule of thumb—that is to say, you can degrade your profession to what was spoken of contemptuously by the medical profession, so long ago as the beginning of the eighteenth century, as "Farriery." Or, by assiduous study of the sciences bearing on your profession, and by constant exercise of the power of observation and of your reasoning faculties, you may not only better alleviate the sufferings of the animals committed to your care, but you may make discoveries of the utmost importance to mankind. Further, by adopting the latter course, you will increase the dignity of your profession, give yourself a joy not to be obtained in the pursuit of wealth, and obtain the respect of those who, while they may sneer at the state of your bank account, secretly honour you.

Your profession offers probably rather more facilities for scientific research than the medical profession. Animals are liable to many of the diseases which afflict the human race. The action of drugs is in most instances the same on domestic animals as on human beings, and indeed for accurate knowledge of the action of drugs, we experiment on animals. There is little difficulty in obtaining a post-mortem examination of your patients. You are not liable to be misled by your patient's account of its illness, and consequently confine your attention to the more valuable objective signs. Lastly, you have more facilities for experiment in treatment.

Most of the recent advances in medical science, some of which I will deal with directly, could quite well have come from your profession, Before proceeding to deal with them, I would like to indicate to you shortly the state of medical science about the middle of the eighteenth century, say the time of the rebellion of 1745. If you are ever so fortunate as to see a copy of that quaint old book, "The Pharmacopœia Extemporanea," by Fuller, 1730, in a second-hand dealer's shop, buy it at once, It was the first Pharmacopœia printed in English, and its quaintness and originality will long afford you amusement and instruction. On glancing through it, you will first notice a panegyric of ale, introducing the section on ales, of which there are thirty-one. You will find antimonial, arthritic, aperient, cancer, diuretic, chlorotic, &c. ales. The panegyric is so quaint, and throws so much light on the ideas of the time, that I quote part of it,—it may interest our magistrates.

"Whatever some outlandish men may invidiously say, and others as rashly believe, middling ale, brew'd of the best malt, boiled, fermented, depurated according to art; that hath no burnt, musty, or otherwise ill smack; that is pale, sparkling, fine, fresh, and not upon the fret; and also, is of age just to leave its malty taste, grow winey, and yet not run into any degree of sourness; such liquor is the most comfortable and coveted drink the world ever yet found out, to pacify the loudest of nature's cries, under the tortures of a burning, hot, thirsty stomach.

For beyond all other things, it cools and moistens the parched membranes of the stomach; scoureth salt, acrid, bitter, frothy, slimy filth, from off the villæ and glands; turns it over the pylorus, and leaves a balmy benign litus instead, to keep all supple and easy. Thus it quencheth that most insufferable passion of thirst, refresheth the bowels, relieveth the spirits, and proves a true cordial in outrageous scalding fevers"—and so on for two pages more.

One naturally turns from ales to purges, to see what treatment our free-eating, heavy-drinking ancestors required. One finds, under the heading, "A common purging bolus"—"Take powered jalap from one scruple to half-a-dram; scammony powdered from 3 grains to 6; calomel, 15 grains; oil of aniseed, 1 drop; senitive electuary, as much as is fit to make it up with."

My patients complain, gentlemen, when I order four grains of calomel to be followed by a double seidlitz powder. What a degenerate race we are. One is not surprised to find that Fuller remarks, "It worketh pretty smartly; and therefore purgeth not only what lieth loose in the ventricle and intestines, but other humours likewise, from the bilious and pancreatic passages, and especially from the glands of the guts."

One next notices the large number of ingredients in each prescription, and the fact that at least one drug amongst the number is suitable to the disease. At that time the active principles of drugs had not been separated, nor had accurate experiments been made on animals as to their effects. The pathology of the day was the humoral one, and, to modern minds, the wording of the therapeutic notes is very quaint. Some extraordinary ingredients appear in the prescriptions, such as snail juce, millipedes, horse-dung water, dead men's skulls. The large number of ingredients in the prescriptions was pretty much a matter of custom, drugs being added to former prescriptions as they were reported suitable for certain diseases by physicians of repute. Fuller, who was in advance of his time, draws the line at dead men's skulls and in his therapeutic note writes:—

"This prescript is in compliance with the customs of practice, but for my own part I declare I abominate it; for I take man's skull to be not only a mere dry bone, void of virtue, or any manner of effect, but also a nasty, mortify'd, putrid, carrionish piece of our own species—man: and to take it inwardly, seems such a horrible execrable fact, that even the Anthropophagi would shiver at it: And therefore in my opinion, 'twould be decent, and almost pious, to carry them all out of the shops and

"Ossa sepulchrali contumulare domo."

One other quotation I will make. Writing of the action of Cantharides, he says:—

"Of all things that we know, Cantharides most powerfully provokes urine, and that (it is thought) by means of their plenty of volatile sulphur, and acrious caustic salts, which, being liquable in the serum and carried to the reins and bladder, sometimes stimulates, pricks, and erodes to that degree, as to cause grievous strangury and bloody urine." Now follows a criticism which shows that the best minds of the profession were awakening to the necessity of experiment. He goes on to write:—

"Some have set their philosophy to work about this, and said, cantharides are full of fine sharp prickles, and these make abundance of little wounds, and consequently the said pains; but this seems unlikely, for as

much as if you grind and mix them with oleose, viscid things, which are likely to break off, and sheathe up those points, yet they will produce the same effect which the fine thinker may consider of."

Since the period which we have been considering, medical science has made enormous strides, the greater part of the progress, however, being in the latter half of the twentieth century. The progress was rendered possible principally owing to the progress of the sciences of chemistry and physics. The active principles of drugs have been isolated, and their action on the various organs accurately studied in the laboratory by experiments on animals. With the advance of chemical knowledge, new drugs of known chemical composition and of undoubted purity have been discovered and experimented with.

Anatomical science is now exact and thorough since provision was made for a regular supply of bodies to our centres of learning, and a method of preserving the bodies by means of antiseptic injections was discovered, so that students could pursue their dissections in a leisurely and thorough manner. Not so very long ago dissections were made with a rush before the bodies became too offensive. Improvements in practical optics have, through the microscope, given us a thorough knowledge of the minute structure of the body. Advance in chemical science, together with our knowledge of histological structure, have enabled us to definitely ascribe definite functions to the various organs. Our assumptions in this respect are amplified or checked by the results of disease of the organs as shown by clinical reports and post-mortem examinations in the large hospitals established throughout the country. Owing to the genius of Lord Lister, antiseptic surgery rather preceded than followed an established connection between micro-organisms and diseases. The connection once established has led to the advance from antiseptic to aseptic surgery, and to the placing of preventive medicine on a pinnacle by the establishment of appointments of officers of public health, whose duty, briefly stated, is to hunt down pathological micro-organisms, to find their habitations, to cabin and confine them when they are in an active condition, to connect their activity with meteorological and other conditions, to take all measures to prevent their multiplication and dissemination. By the help of the improved apparatus and methods of physical science, the electrical phenomena of nerve and muscle have been minutely investigated, and the connection between stimuli and muscle contractions has been investigated. Chemical science has enabled us to easily obtain the ultimate analysis of the constituents of the body, and the more difficult task of obtaining formulæ for them is well advanced. Much progress has yet to be made in this branch of investigation, because the most potent principles in the body, such as enzymes, oxidases, toxins, antitoxins, yet defy analysis. Chemical science, and its younger sister, bacteriological science, have shown us that the animal body is a laboratory which can manufacture its own antidotes to a poison introduced within it or produced within it, owing to derangement of function or to bacterial activity. It remains for the science of the future to discover how this defensive activity can be increased by the administration of drugs.

New radiant forms of energy, recently discovered, have been impressed already into the service of medical science. Even the recent work of Professor Dewar on the liquefaction of gases has already been utilised, microbes being ground up in liquid air, the low temperature of which renders them quite brittle. We are thus enabled to try the effects of the material of which the microbes are composed.

Now, gentlemen, the point which I wish to make is, that most of these advances could quite well have come from your profession, and, indeed, a good deal of work, especially in bacteriology, has come from the Continental veterinary colleges. Why then have the veterinary schools in this country not contributed more to the advancement of science? The answer, I think, is to be found in your Principal's able address at the beginning of Session 1901-2. Of the five veterinary collegs, only two, as he pointed out, situated in London and Dublin respectively, have received pecuniary aid apart from fees of students. At the present time it is quite impossible to undertake research under such conditions. This country is already suffering from the insufficiency of what you might consider the rich endowments of its universities and technical colleges. Modern laboratories are very expensive for upkeep. Students who are overwhelmed by the facts of modern science during the course cannot be expected to undertake scientific research. The ablest graduates are oftenest in such circumstances that they cannot undertake research unless their livelihood be secured to them by scholarships. Even professors, whose Chairs are not sufficiently endowed to remove from them anxiety regarding their living, are not in a state of mind fitting them to undertake patient investigation. The wonder is that so much has been done in this country under the circumstances. As has been pointed out repeatedly, university and technical education receives much larger support from poorer Continental countries, and the veterinary colleges are in most instances Government institutions. Your College has done excellent educational work for thirty-eight years, depending only on the students' fees. It has deserved well of the State, and has been quite unrecognised by the State. Yet, as I have made plain, I hope, in my address, no better investment could be made than grants to colleges such as yours, which would enable them to set a band of earnest graduates at work to help the advance of medical science. I believe that the day is not far distant when you will obtain recognition and support either by a sufficient grant from Government, or by affiliation to the University. The latter scheme, by setting free a considerable part of your College buildings for purely veterinary work, would put you on a more satisfactory footing at comparatively small outlay.

The Royal Dick Veterinary College, Edinburgh.

INTRODUCTORY ADDRESS

DELIVERED BY JOHN GRAY M'KENDRICK, M.D., LL.D., F.R.S., PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF GLASGOW, OCTOBER 1903.

GENTLEMEN,—Nearly thirty years have passed since I was a lecturer on Physiology in this College. The mere mention of this fact suggests to my mind many serious considerations with which I shall not trouble you, but I cannot help observing that the professoriate has entirely changed, and that I miss faces which were familiar to me at the outset of my professional career. Many have passed away, after finishing the work of their lives, and some have disappeared in the rough and tumble of life. But there is one outstanding name of which we may all be proud—that of James

Dewar—who, by his wonderful researches into the region of low temperatures, has taken a foremost place among the physical chemists of the day. Thirty years ago he was working in the chemical laboratory of this College, with the same insight and originality and perseverance that distinguish his work at the present day. Whilst he was, at the same time, acting as one of the teachers in the University, this laboratory, rough and ready as it then was, gave him facilities for original research, and there he laid the foundation of the fame now associated with his name.

I have great pleasure in acceding to the request of your Principal to deliver an address at the opening of the session, because, as I have already indicated, circumstances have led me to take a deep interest in veterinary science, and I am, to some extent, familiar with the course of study followed by veterinary students. shall always look back on my connection with the Dick College with feelings of gratitude, because the studies requisite for the position led me to take a broader view of physiology than I would probably have done had my experience as a teacher been limited entirely to students in our medical schools. My connection with the Dick College was also the channel by which I became associated with an important Trust. The late Miss Mary Dick, sister of Professor Dick, the founder of this College, appointed Principal Sir William Turner, Professor John Chiene, Mr. Middleton Rettie, advocate, and myself, her trustees for carrying out the purposes of her will. The trustees were directed to allow the funds left by Miss Dick to accumulate until they reached a certain amount, when they were to be divided into two equal parts or moieties; one part, say ten to twelve thousand pounds, was then to be devoted to the furtherance of veterinary science in Scotland, in the way that seemed to the trustees to be the most advantageous; and the other part, say ten to twelve thousand pounds, was to be used in founding in the University of Edinburgh, a Chair of Comparative Anatomy, or of Surgical Anatomy. These funds have steadily accumulated, and now we have the near prospect of seeing the purposes of the trust carried into effect. But the present time seems to be favourable for initiating a new scheme for the future management of the College, for placing it on a sound financial basis, and for extending its usefulness; and I may say that a scheme is now under consideration. I have no right, at the present stage, to unfold the details of this scheme, but I may say that it contemplates the formation of a Trust, or Board, of a representative character, to whom the Magistrates and Town Council of Edinburgh, as the trustees of the late Mr. William Dick, will hand over the College. The Magistrates and Town Council of Edinburgh have for many years, and often under very discouraging circumstances, managed the affairs of the College with great judgment and liberality; but it has long been felt by many interested in education, and also by influential members of the Town Council, that the affairs of the College might more appropriately be placed under the care of a body of managers elected for the purpose. Further, the trustees of Miss Mary Dick, at this important epoch in the history of the College, contemplate the application of the funds at their disposal towards the endowment of Chairs, or lectureships, in connection with those departments of veterinary science that seem to them in most need of assistance. Obliged as they are by the terms of Miss Dick's will to found a Chair in the University of Edinburgh, they hope that a way may be found by which this Chair will benefit the teaching of veterinary science in Scotland. The other part of Miss Mary

Dick's funds might appropriately be applied to establishing a Chair which might then be termed the "Miss Mary Dick" Chair. This would be a worthy memorial of a woman who has done much for the College, and who was possessed by the idea of doing all in her power to carry out the intentions of her brother, William Dick, in the establishment in Edinburgh of a well-equipped veterinary college. Further, by the munificence of a public spirited member of your profession, Mr. Inglis MacCallum, an endowment of £.15,000 has been promised for the Chair of Pathology in the Dick College. It appears to me, and here I wish to say that I express my individual opinion, that the three departments of Anatomy, Physiology, and Pathology—subjects that lie at the very foundation of veterinary medicine and surgery—are most in need of assistance. The teaching of these subjects demands, in each case, the whole time and energies of the Professor. From their very nature, they, to a very large extent, exclude practice on the part of the Professor.

I am strongly of opinion that in some such way the cause of veterinary medicine would be promoted in Scotland to an extent that would place your school on a level with some of the great veterinary schools on the Continent. Young men should be encouraged to devote themselves to such subjects as veterinary anatomy, physiology, and pathology, not merely as teachers, but as workers in research. Up to the present time too few have specialised in the direction of the anatomy, physiology, and pathology of the domestic animals. Hitherto physiology, for example, has been taught on general principles, and without that intimate acquaintance with the physiology of the domestic animals which only a veterinarian physiologist may be expected to possess. It is to be hoped that the institution of such Chairs would produce specialists in these departments—men of the type of Chauveau, Ellenberger, Colin, and Munk, who have distinguished some of the Continental veterinary schools. Some might urge that there is no special necessity for the existence in veterinary colleges of Chairs of Chemistry, Botany, Physics, and Physiology, as all these subjects are taught in the Universities; but, after much consideration, I am strongly of opinion that, with the exception of chemistry and physics, there should be special Chairs for botany and physiology—more especially for the latter. Even botany should be taught more in the direction of the wants of agriculturists and of those who have to do with the management of domestic animals. No doubt the elementary principles of botany are the same for all classes of students, but a wholesome differentiation in teaching should be begun even at an early period. Still more important is it that physiology should be taught by veterinarian physiologists.

I understand there are also hopes that the Universities may be induced to give direct encouragement to the higher studies in this department of science by the institution of a degree of Bachelor of Science in Veterinarian Science. Such a degree would, of course, be open to students from all recognised schools of veterinary medicine who conformed to the regulations of the Universities. The degree would not be a legal qualification to practise. That you can only obtain by earning the diploma of the Royal College of Veterinary Surgeons. But the degree would imprint a stamp of distinction on the man who obtained it, and it would undoubtedly contribute not a little to raising the status of the veterinary profession. Nothing could be more desirable, in the higher

interests of the veterinary profession, than that there should be some sort of recognition of the veterinary schools and of the veterinary profession by the Universities of the country. Hitherto there has been none. The subject has attracted more attention on the Continent. After studying the published programme of courses of instruction in the universities and technical and other colleges in Germany, Austria, and Switzerland for the coming session, I do not find any professor of a department of veterinary science in any of the Faculties of the Universities. There are, however, separate veterinary colleges in Berlin, Brussels, Dresden, Hanover, Munich, and Stuttgart, while there are distinct Veterinary Faculties in the Universities of Berne and Zurich. The arrangements for teaching veterinary science in these Continental schools are more extensive than in our British schools. The Continental method of greater specialisation is followed in the veterinary as in the medical schools. Thus, in the Veterinary College at Berlin I find 14, at Dresden 13, at Hanover 17, at Munich 14, and at Stuttgart 12 professors or teachers. The Veterinary Faculty at Berne has 7, and that of Zurich 6 professors. We may take the Berlin School as an example of the method followed in dividing up the courses of instruction. We find lectures or courses of instruction on the special pathology of the domestic animals, on special therapeutics with clinical demonstrations, on physiology, on chemistry, on embryology, the pregnant state and parturition, on the special surgery of the larger domestic animals, on the special anatomy of the horse, on bacteriology, and the examination of infected meat, on diseases of the hoof, on pharmacology and toxicology, on the anatomy and physiology of plants, and on the diseases of sheep and of the smaller animals.

I have now, in the name of the Principal and Professors of the College, to give you a warm welcome, and to express the hope that you will enter on your duties with earnestness of purpose. You have chosen a highly useful profession, and in preparing yourselves for it you will pass through a course of study which is full of interest, whilst it is also a healthy mental discipline calculated to develop many of the best parts of man's nature. You will get a glimpse into the world of science; the Chemist will teach you not a little regarding the chemical and physical laws that regulate everyday phenomena, and regarding the properties of the matter of which this universe is built; the botanist will lay before you many of the wonderful phenomena of plant life, and will awaken, I hope, your interest in the flowers of the field; whilst the anatomist and physiologist will discuss with you the still more remarkable processes going on in the animal body—processes, a knowledge of which not only involves the most recondite problems of physical and chemical science, but lies at the root of some of the most profound questions in philosophy. Your scientific training, therefore, apart altogether from the study of the more technical branches of your profession, such as veterinary medicine and surgery, is fitted to expand your mental vision, to enlarge your ideas, to awaken thought, and to stimulate enquiry. I confess I do not envy the man who can pass unmoved through such a course of study. It betokens a certain sluggishness of mind, and a want of that enthusiasm without which no progress can be made. Enter upon your studies with the enthusiasm of youth. Do not think of science as a barren collection of facts, or even as a certain amount of knowledge that must be acquired so as to aid you in the more practical work of your profession. It is all this, but it is much

more. The study of science is a privilege granted to man to see into some of the wonderful processes of the universe. He is taken behind the scenes, and he gets a glimpse of the intricate machinery by which things live and move. There will arise reverential feelings when the mind recognises that behind all the facts and phenomena known to man there are many more of which he knows little or nothing. Such a frame of mind, while it enables a man thoroughly to enjoy the study of natural phenomena, will save him from the conceit and rash dogmatism which have not unfrequently brought opprobrium on science and on its followers.

When you pass to the study of the diseases of animals, and the means of remedying them, you enter on a field that is most closely connected with the domain of human medicine and surgery. I do not require to enlarge on the usefulness of the veterinary profession. It has the charge of the health and well-being of millions of animals which constitute a large portion of the wealth of the Nation. One is overwhelmed by the figures given in the volume of Agricultural Statistics collected for the Board of Agriculture for 1902. There it is stated that in the United Kingdom, including the Isle of Man and the Channel Islands, there were in that year over two million horses, nearly eleven and a half million cattle, over thirty million sheep, and over three and a half million pigs. I cannot find any trustworthy statistics regarding the number of our domestic pets—dogs and cats. You will be called upon not only to treat the diseases to which these animals are liable, but also to ascertain the cause of disease, more especially of those epidemics which occasionally ravage our flocks and herds. Your studies, therefore, will include not only veterinary medicine and surgery, but also the hygiene of the domestic animals. You will deal both with the causes and the consequences of disease, and also with its prevention.

I should think, also, that the advice of the veterinary surgeon must be of value in connection with the breeding of stock. Acquainted, as he should be, with the laws of heredity, his opinion ought to be of importance in determining whether or not the crossing of certain strains would be advisable. Wonderful progress has been made by breeders of all classes of our domestic animals. I need only mention, by way of illustration, the development of speed, strength, courage, and pluck in our English race-horse; of strength and endurance in the hunter; and of immense muscular power in such animals as the Clydesdale. Again, it is interesting to notice in this connection the remarkable breeding of short-horns, especially in Aberdeenshire, by which animals are produced that are valuable from the point of view of being, as I might call them, "beef-makers," on economical terms. It is well known that all highly bred animals command large prices, more especially as stock producers, and this is so because the progeny they beget are intrinsically valuable. Yet I suspect that much of the knowledge of stock-breeders is still empirical and by rule of thumb, and is not yet founded on scientific principles. Recently I had the opportunity of visiting the paddocks of a well-known breeder of "thoroughbreds," and I was much impressed by the care taken in the selection of sires, with the view of developing a particular quality in the foals. Yet sometimes serious mistakes were made. One case was pointed out to me where a yearling was sold for £100, although it came off a sire and mare of undoubtedly fine qualities, and the low price was taken because it was thought that the animal was deficient in those qualities. Yet this cheap animal

won £7500 in race-money for its purchaser. Another animal bred in this establishment was sold for the large sum of £3200!

Disease amongst our domestic animals always represents pecuniary loss, and this loss has to be borne, not only by the rich, but also by the poor. For example, any disease which either lessens the number or depreciates the quality of these animals furnishing food to the community,—and this notwithstanding the large importations now made of cattle and of meat,—increases the price of butcher meat, and consequently may put it out of the power of many to obtain this indispensable article of food. The value of the live stock in this country is enormous, and forms a considerable part of the wealth of the nation. It therefore becomes a matter of the greatest importance to every member of the community, that veterinary surgeons, who are the advisers of the public in these matters, should be thoroughly educated and prepared for their work. In addition to these considerations, there is also the duty we owe to all animals of maintaining their health and well-being, and of relieving them of suffering and of pain. If this be so, the question arises as to whether veterinary colleges should be left entirely to local and individual effort, with the result that they maintain a somewhat precarious existence from scanty endowments and the fees of students. Until comparatively recent times this was the view taken by eminent statesmen of the position even of our great Universities. But we are beginning to see that some of the continental nations are wiser than we are in this respect. I find that the Royal Veterinary College in Berlin receives nearly £14,000 per annum from the State. In the Veterinary College of Copenhagen the expenditure is nearly the same. The veterinary schools of France receive large subsidies from the State, but I have been unable to ascertain the exact amounts. Our Government has recently expended a considerable sum in the building and endowment of a Veterinary College in Ireland. My belief is, that ere long this country will waken up, and that scientific teaching and research (and I include all branches of learning pursued in a scientific spirit) will be endowed to an extent hitherto undreamt of by those who have guided our educational affairs. It is true that State endowment may involve, to some extent, State supervision, but even that incubus, as some would regard it, would not counterbalance the benefit that would be derived by the nation from the more liberal endowment of teaching and research. It is to be hoped, when something like the millennium arrives, that is, when there may be an endowment of £25,000,000—the modest sum asked for by the President of the British Association—that the claims of veterinary science will not be overlooked. Fiscal discussions are the order of the day, but I leave it to fiscal politicians to indicate from what source these funds are to be derived! I thoroughly agree with Sir Norman Lockyer that, if we are to recover the position we should hold in this country in scientific work and in scientific training, and if we are to develop the brain-power of the nation to its highest efficiency, we must spend much larger sums on our colleges, technical schools, and universities, than we have hitherto expended.

It cannot be too strongly urged that the veterinary practitioner should receive the same education as is received by those who engage in the treatment of disease in the living man. There is a popular idea that the veterinary surgeon need not be so well informed as he who deals with the ailments of man. This notion, no doubt, arises from the higher value justly attached to human life. But, if we attempt to treat disease at all,

the work to be done in both departments of practice is essentially of the same nature. The structure and physiological processes of the bodies of domestic animals are essentially the same as they are found in the human being. The diseases to which both are liable present remarkable similarities. The medicines which are useful in one usually produce beneficial effects in the other. It may even be asserted that the diagnosis of diseases in the common animals is even a more difficult department of the healing art than the same kind of work in man, inasmuch as the patients of the veterinary practitioner can give no direct information regarding their feelings. In this respect practice among the domestic animals resembles the treatment of children, who cannot tell the physician how they feel, nor assist him much in the detection of the disease from which they suffer. When the veterinary surgeon has to deal with the dumb animal, he must depend on objective signs of the disease. He must be a rapid and accurate observer. He must collect his information by a careful physical examination of the parts supposed to be the seat of the disease; and he must call to his aid all the appliances and instruments—stethoscope, microscope, thermometer—which are now used in modern medicine.

It is evident, then, that our veterinary practitioners must be thoroughly educated men. They ought to be conversant, equally with students of medicine, with those sciences on which the art of medicine is founded, and they ought to have equally good opportunities of acquiring a practical knowledge of the profession. Gentlemen, this ideal is the aim of the College to which you have come. I have looked over your curriculum of study, and its fulness and thoroughness have struck me as remarkable. All I shall say of it is, you must work hard to get through it successfully; it will tax your energies, and try your mental powers; but I have no hesitation in affirming that, if you pass through it successfully, you will start in your profession with a large stock of theoretical and practical knowledge, and be ready for your work.

In conclusion, let me say that those of us who are now in the evening of life have a certain feeling of something like envy when we consider what is before the young men now sitting on these benches. We have seen marvellous developments of science in our time. When we cast our thoughts backwards we see a stately procession of great discoveries—light and motion derived from electricity; the microphone, by which delicate vibrations of matter are converted into electrical thrills; the telephone, by which the vibrations of human speech are converted into electrical waves, and from these again the vibrations are reproduced as sound; and the phonograph, by which the mechanical nature of human speech and of all sounds can be demonstrated. Then we wonder at the power man shows he has over matter, when we think of the arrangements by which the constituents of the air have been solidified, and even hydrogen has been obliged to succumb. It will now be possible to investigate the properties of matter at temperatures not much above absolute zero. Recent researches too have demonstrated the existence of etherial waves of various lengths, some of which, falling on sense organs, give rise to the sensations of heat and light; others discovered by Röntgen, to which many opaque bodies are transparent; the rays of Becquerel and Finsen, which possess remarkably physical, chemical, and even therapeutical effects; whilst a third, of much greater wave length, can be so manipulated as to convey the words

of men from place to place without material conductors, as in so-called wireless telegraphy. Then, in the domain of medicine, have we not seen the rise and progress of asepticism in surgery, one of the greatest triumphs of the healing art; have we not marked the progress of bacteriological science by which the origin of many diseases is now known; and, last of all, have we not been enchanted with the discovery that so-called toxins produce anti-toxins, and that thus by our use of the latter in some diseases the poisonous toxins may be apparently chemically neutralised, and thus life may be saved? These are wonderful achievements of the human mind. But we cannot help feeling, in the light of recent scientific progress, that even greater discoveries are at hand, and that phenomena are being revealed of which we have at present only the dimmest knowledge. By the discovery of radium, for example, we approach a conception almost like that of perpetual motion. Here is an innocent looking whitish-yellow powder, which is giving off an apparently inexhaustible store of material emanations, so small as to be far below the size of so-called atoms, and yet travelling with such velocity that when they impinge on certain fluorescent substances, they produce the phenomena of light, heat, and electrical action. It would appear, also, that radio-activity is a widely diffused phenomenon, although manifested to a higher degree by radium than by any other known substance. We are thus brought face to face with a new world of phenomena, and our conceptions of matter and energy may have to be revised. In physiological science, I see a future in the application of the wonderful advances recently made in physical chemistry. We have, during the past thirty years, scrutinised every cell and fibre with the highest microscopic powers, and with the aid of all the modern methods of histology, so that it seems to me little progress can now be hoped for in that direction. During the same period we have, by the use of the graphic method, registered and studied muscular movement, and all the obvious movements of the bodily organs, such as the heart, lungs, &c I do not expect much more from that line of research. But physical chemists are giving us new conceptions of the nature of solutions, of the laws of diffusion, and of osmotic action, and more especially the fertile notions of osmotic pressure and of the dissociation of chemical compounds into atoms or ions charged with electricity. These speculations are, I believe, destined to throw light on the ultimate problems of life. The phenomena of life must be molecular in their character, and just as the physicists and chemists are at present wrestling with the problems of molecular motion in dead matter, so will the physiologists and pathologists of the future have to deal with the molecular movements in living matter. It is in this direction I believe future progress will be made. You, gentlemen, have bequeathed to you a great inheritance of scientific achievement, but there is yet much to be won. On all sides we are surrounded by phenomena and forces of which we yet know very little, and in the living matter that forms our bodies there are physical and chemical phenomena, of a molecular character, of which we are equally ignorant. It may be in the power of some of you to join the great army of investigators, and thus to throw light on those obscure problems. In thus thinking of your future, I almost envy your youth, and, I hope, your enthusiasm.

Royal College of Veterinary Surgeons.

A QUARTERLY MEETING of Council of the R.C.V.S. was held at the College, 10 Red Lion Square, W.C., on Friday, October 2nd, 1903, Professor W. O. WILLIAMS, President, in the chair. The following members were present:—Vet.-Colonel Duck, C.B.; Professors Dewar, M'I. M'Call, M'Fadyean, Mettam, Penberthy, and Shave; Messrs. Allen, Banham, Byrne, Carter, Cope, Dollar, Lawson, Mason, M'Kenna, Mulvey, Overy, Shipley, Trigger, Wartnaby, Wragg; Mr. Thatcher (Solicitor), and Mr. Hill (Secretary).

Letters regretting inability to attend the meeting were received from Messrs. Abson, Locke, M'Call, and Simpson.

MINUTES.

Mr. TRIGGER, having moved that the minutes of the last meeting should be taken as read,

Mr. MULVEY called attention to the fact that at the special meeting of Council held on July 2nd there were only 23 members of Council present according to the minutes, and that the voting for President showed that 26 votes were recorded, and he wished to know how that arose.

The SECRETARY explained that three members of the Council who were present omitted to sign the book.

The PRESIDENT stated that he himself counted the number of members, which was in accord with the number of votes. In the August issue of the *Veterinary Journal* the names of the three gentlemen which did not appear in the official minutes were added, namely, Professor Shave, Mr. Banham, and Mr. Barrett.

Mr. M'KENNA asked the President if he was quite satisfied.

The PRESIDENT replied that he was quite satisfied there were 26 members in the room; he counted them.

Mr. MULVEY said he only drew attention to the matter because he considered that business ought to be conducted in a business-like way; having drawn attention to the matter, he was satisfied.

The minutes were then taken as read, and confirmed after a slight verbal alteration had been made.

OBITUARY.

The SECRETARY read the obituary list.

Mr. WRAGG moved that a letter of condolence should be sent to the friends of the late Mr. J. Roalf Cox, who was a past President, a member of Council, and also a member of the Board of Examiners. Mr. Cox was not only a gentleman who upheld the honour and integrity of the profession, but was a great ornament to it.

Mr. MULVEY seconded the motion, which was carried in silence, all the members of the Council standing.

The PRESIDENT stated that on hearing of the death of Mr. Roalf Cox, the Secretary was instructed to send a wreath, but the funeral was then over. Mr. Hill also sent a letter of condolence, and a reply had been received from the relatives thanking the Council for it.

Professor M'FADYEAN said the obituary list also contained the name of another distinguished member of the profession recently deceased,

For "Edinburgh" in line 15 of page 253 read "Aberdeen."

XUM

namely, M. Nocard, who, he thought it might be truthfully said, illumined every subject to which he turned his attention, and that many of his researches would bear fruit to the advantage of agriculture for generations to come. To the very highest intellectual endowments Professor Nocard added a sweetness of disposition and a charm of manner that endeared him to everybody who had the good fortune to know him. He thought it was fitting the Council should record on their minutes the sense of the great loss the profession had sustained in the death of such a distinguished member, and that a copy of the entry be sent to the Director of the Veterinary School at Alfort.

Professor METTAM seconded the motion, which was carried in silence, all the members of Council standing.

CORRESPONDENCE.

The SECRETARY read a letter addressed to the President from the Secretary of the Senatus of the University of Edinburgh, stating that at a meeting of the Senatus held on 29th September, a letter was read from Mr. J. M'Lauchlin Young, in which he urged that the time had now arrived when Universities might recognise the veterinary profession by granting a diploma or degree to members of the profession who were prepared to attend a further course of study at a University. Mr. Young suggested that a few of the members of the Senatus might meet in conference a representation from the Council of the R.C.V.S., to consider the whole matter, and the Senatus appointed as its delegates three of its Professors.

The SECRETARY read a letter from the Solicitor in regard to veterinary degrees, stating that he had been in communication with the Principal of the Edinburgh University and the Town Clerk of Edinburgh, with the result that an ordinance would not be asked for until the College or its advisers had had an opportunity of seeing the modified scheme, the details of which had not been settled. A similar measure was in contemplation between the Royal Veterinary College of Ireland and the Royal University of Ireland, and Professor Mettam had promised to let him have details of the measure before anything was finally settled.

Professor DEWAR asked the solicitor what he meant by the expression "modified scheme."

Mr. THATCHER replied that anybody reading the original scheme would think that students from a particular College only were able to obtain a veterinary degree. The modified scheme was, that only persons holding the diploma of the R.C.V.S. were eligible for veterinary degrees.

Professor M'FADYEAN said he distinctly understood that the University of Edinburgh admitted in correspondence that they had never contemplated granting any degree in veterinary science, except to those who had previously obtained the diploma of the College.

Mr. THATCHER agreed that they admitted that in correspondence, but thought the reading of the original scheme would hardly have borne it out.

Mr. DEWAR said that as far as he was aware there was no modification whatever; anything that Mr. Thatcher had elicited had been in the way of explanation.

Mr. M'KENNA asked whether Mr. Thatcher thought that as the scheme stood at present, only Dick students could apply for the veterinary degree, and that other College students up to the present could not.

The PRESIDENT said it was distinctly stated in the circular issued by the Town Clerk of Edinburgh, that students who had passed the curriculum of the Dick Veterinary College should be eligible for the University degree, and it made no mention whatever of the R.C.V.S. That was printed and issued by the Town Clerk of Edinburgh, and the R.C.V.S. was ignored completely.

Mr. M'KENNA presumed that the modification Mr. Thatcher considered necessary was, that instead of having only the Dick College, any member of the R.C.V.S. could obtain the diploma.

Professor M'FADYEAN submitted that the R.C.V.S. had never expressed any opinion with regard to the point. He thought the Council would entirely exceed its legitimate province if it attempted to dictate to any University what particular training was to be considered necessary for one of the degrees of the University. It was perfectly within the right of the Edinburgh University to arrive at the decision that a training in another veterinary college in Scotland other than the Dick Veterinary College was not adequate. Was the Council going to commit itself to the opinion that the Universities must not exercise that right? He noticed that the President of the College had on a public occasion in Scotland committed himself to an attitude which he ventured to describe as a wrong and unwise one, by indicating that in his view it would be wrong for Edinburgh University to make among their regulations for qualifying for the degree one which said that the intending candidate must pursue a certain course of study at the Dick Veterinary College. He did not know whether anybody intended to propose that the College should approach Edinburgh University and advise them that they ought not to do the thing which it was suggested they contemplated doing. In his opinion the Council would be ill advised if it departed from the simple proposition that no degree in veterinary science must be given to any one who had not previously obtained the Diploma of the R.C.V.S.; everything else must be left to the examining body.

The PRESIDENT, in reply to Professor M'Fadyean, said his only contention was that degrees should be open to none but members of the R.C.V.S., and that each University might make what conditions it chose. That was a statement of his own, specially directed against the original statement of the Town Clerk of the City of Edinburgh, that students attending the curriculum of the Dick College should be eligible for a University degree, omitting all reference to the fact that they must be holders of the Diploma of the College. He had no desire to interfere with any University; all he desired to say was that the University only gave the degrees to the holders of the Licence of the College.

Professor M'FADYEAN said he was absolutely satisfied with the President's explanation; he certainly misunderstood what had been said.

Professor DEWAR thought it his duty to call the President's statement in question. He thought he knew as much of what was done by the managers of the Dick Veterinary College as anybody, and had naturally had something to do with the arrangements which preceded the statement referred to, and he had never heard any one give expression to the opinion that the privilege of granting degrees to veterinary surgeons who were not already members of the R.C.V.S. should be exercised by the Edinburgh University.

Professor METTAM understood that the Dick College was to be affiliated

to the Edinburgh University. If that was so it became part and parcel of that University, and the Senatus could require the student who had taken out a particular diploma to attend classes in their College. With regard to the training in the schools, it was for each veterinary college to look after itself, but to his mind if the Dick Veterinary College became part and parcel of the Edinburgh University the Senatus would be able to require that the candidates for their degrees should take out the classes within the walls of the Dick College.

Mr. SHIPLEY suggested that the Council might ask the University to extend the favour to the other school. It seemed to him an injustice that one school should be practically boycotted.

Mr. THATCHER thought there would be no difficulty with Edinburgh University or with the Dick College, but that the whole matter could be arranged on a very amicable footing. Up to the present moment he had met with the utmost courtesy and consideration from everybody with whom he had had to do, and a desire to come to an amicable conclusion satisfactory to all.

Professor M'FADYEAN hoped that Mr. Thatcher did not think he was empowered by the Council to make any representations whatever to Edinburgh University *apropos* to the scheme except the one that they should not admit to the examinations, or grant the degree in veterinary science to any one who was not already on the Register. He objected to Mr. Thatcher making representations to Edinburgh University as to the justice or injustice, wisdom or unwisdom, of recognising this or that veterinary College.

The PRESIDENT said there seemed to be an impression conveyed by Professor M'Fadyean that Mr. Thatcher was fighting the battle of the R.C.V.S. and of two veterinary colleges that had not been recognised in Scotland by the Edinburgh University. He might say for one of those colleges, that it could fight its own battle, and they had not asked Mr. Thatcher in one single iota to assist it in its struggle. All that it had done had been done by itself for itself. He, as an individual and President of the R.C.V.S., had taken no notice of his own school, but had directed the attention of Mr. Thatcher to the fact that there was a danger of Edinburgh University granting a licence, and it was only on that that Mr. Thatcher had acted with his consent or concurrence. Edinburgh University in their issue from the Town Council took no notice of the College, and that was the reason why the step was suggested.

Mr. CARTER proposed that the College select certain members to represent the R.C.V.S. in connection with the scheme, to meet the Senatus of Aberdeen.

Mr. M'KENNA seconded the motion.

Professor M'FADYEAN moved as an amendment that a letter be sent with a statement that the Council would be satisfied with any arrangement the Senatus of Aberdeen University might make with regard to the institution of a degree in veterinary science, provided it maintained the provision that only those already possessing the diploma of the College should have the degree of veterinary science.

Mr. MULVEY seconded the motion.

Mr. CARTER having, with the permission of the Council, withdrawn his motion, Professor M'Fadyean's amendment was put as the substantive motion, and agreed to.

Professor METTAM stated that nothing had been done up to the present with regard to the Royal University of Ireland. There was a meeting of the Standing Committee next month, when the whole subject would be discussed.

The SECRETARY read a letter from Mr. G. H. Edwardes, of the Metropolitan Police Court, stating that when on 29th May Professor Williams arranged for some one to attend to consider whether on the grounds of humanity the veterinary surgeons would be willing to assist in bringing about the more expeditious killing of seriously injured horses, the Commissioner of Police was given to understand that reasons of professional etiquette would probably prevent veterinary surgeons from killing horses themselves, that there would be difficulties in the way of their being attended by an assistant who could do it, and that Greeness killers were considered to be dangerous and undesirable weapons to be used even by skilled operators in the streets. Mr. Edwardes asked to be informed of the result of any deliberations on the subject.

Mr. WRAGG, who interviewed the Commissioner, and the President having narrated to the Council what took place at the interview, several members of the Council gave their experiences of the best methods of killing horses in the streets.

Professor M'FADYEAN thought that the Commissioner wished to get, without paying anything for it, a highly valuable opinion as to the most humane method of killing horses. He was disposed to move that the Commissioner be advised to consult the President in his private capacity. He hardly thought it was reasonable that the Council, with so much other business, should deliberate for half an hour on that matter, and moved that it proceed to the next business.

This was agreed to.

The SECRETARY read a letter from the Solicitor reporting that several claims had been made by members of the College for exemption from serving on juries. In the case of Mr. Hajmaier, the Magistrate decided against the claim, but a case was granted, and the necessary steps were being taken to obtain the decision of the Divisional Court, which decision would be binding on justices throughout England. In two other cases the Magistrates, on hearing that a test case was in progress, adjourned them until it was decided, while two other gentlemen obtained exemption.

Mr. THATCHER further reported that two cases had arisen since, in one of which the Magistrates allowed exemption and in the other refused it.

PRESENTATIONS TO THE LIBRARY.

The SECRETARY read the following list of presentations to the Library:—Three months copies *Veterinary Journal; The Journal of Comparative Pathology and Therapeutics*, June 1903; Bound volumes of *Veterinary Record*, vol. 15, 1902-3; *The Calendar of the Pharmaceutical Society*, 1903; "*The Use of Molasses as a Feeding Material*," by Ed. Curot, translated by Vet.-Col. J. A. Nunn, F.R.C.V.S., C.I.E., D.S.O.; "*The Castration of Cryptorchid Horses*," by F. F. G. Hobday.

A vote of thanks was accorded to the donors.

The PRESIDENT presented the following report *re* Army Veterinary Department: "The War Office announce that a Royal Warrant will shortly be promulgated granting combatant rank to the officers of the A.V.D., and considerably improving the rates of pay and retired pay." (Cheers.)

It was resolved that the following report from the President, on the Berlin Congress, should be taken as read, and printed with the Minutes :—

REPORT BY THE PRESIDENT, ACTING AS REPRESENTATIVE OF THE ROYAL COLLEGE OF VETERINARY SURGEONS, AT THE INTERNATIONAL CONGRESS IN HYGIENE AND DEMOGRAPHY HELD IN BRUSSELS IN SEPTEMBER 1903.

GENTLEMEN,—In accordance with a resolution of this Council in January, I proceeded to Brussels on September 1st to attend the Congress.

Owing to some oversight the subscription of one pound had not been paid, and I was consequently unable to see the papers presented by the various contributors until the 3rd September. These papers number about 150, and vary in length from four pages up to about 200 pages; they are in numerous languages—the majority in French, then German, English, Italian, Spanish, Hungarian, &c. You will easily understand that it was a matter of impossibility for one man to do more than in reality look in at the various meetings of sections, and were I to attempt to prepare you even a summary of the work, it would take me some months.

It was a matter of much gratification to note that among the illustrious men present were considerable numbers of the veterinary profession, such as Professor Chauveau, Professors Degive, Arloing, Bang, and Schutz, from foreign countries, and Messrs. Hunting and Woods from the National Veterinary Association of Britain, and I'm sure that we three members of this College each wished that we were divisible into many portions so as to attend all the sections at the one time. I do not for one moment desire to thrust my opinion as regards the transmissibility of bovine tuberculosis to man or otherwise, but I do wish to mention that the extirpation of tuberculosis in the lower animals is in itself a subject which well deserves discussion at such a gathering, and, as far as I am aware, such was *not* done.

It is an extremely difficult matter to say which major subject was the most important from the veterinary point of view. All were of deep interest. *Transmissibility of disease* from animal to man—not only tuberculosis, but the many other micro-organismal and macro-organismal ones, which we know; *The sterilisation of milk; The inspection of meat; The disinfection of stables, horse-boxes, &c.; The purification of sewage; The prevention of lead and other poisonings; The actions of serums and antitoxins, &c.*

Perhaps the most important paper was an exhaustive one by Dr. G. Gratia of the State Veterinary College at Cureghem, to the first section—in reply to the question, "Are tuberculoses of man and of the domesticated animals due to the same micro-organisms—namely, the bacillus of Koch?"

The learned Doctor after recapitulating the various arguments for and against the theory, gave the following as the conclusions at which he had arrived :—

GENERAL CONCLUSIONS.

We have arrived at the end of our work, and we find ourselves in presence of the principal documents involved by the partisans and the adversaries of the specific identity of tuberculosis considered in man and in animals. We have drawn up an account of the unicist's thesis, and of the separatist's antithesis. It behoves us now to draw from it the synthesis in conclusion, and to keep strictly to the terms of the question which is submitted to us, and we think ourselves authorised to answer.

1. Yes, according to the present state of our knowledge, it must be admitted that human tuberculosis and the tuberculosis of the domestic animals are one and the same morbid condition, due to one and the same microbe—the bacillus of Koch.
2. If there exist variable modifications of the morbid type, there also exist modifications not less variable of the tubercular bacillus type. These variations are relative to its form, to its culture, and to its virulence. In other words, if tuberculosis is a zoonose (animal disease) from the chemical and the anatomo-pathological point of view, it is not the less so from the bacteriological point of view, not only when considered among subjects of this kind, but also, and above all, when one faces it in individuals of different species.
3. These conditions (modifications) of the germ, however real they may be, do not go beyond the limits of the variability of the specific type. They are, besides, neither absolute nor permanent, and one may add, that among the characteristics of any species of tubercular bacillus, there is not one which cannot be possessed or acquired by the other species of the same bacillus.
4. The differences observed amongst the various representatives of the Koch's species of bacilli acknowledge as a principal factor the mean influence which serves them as a general habit, for one can efface them or make them appear artificially by modifying the existing conditions of these micro-organisms in living or lifeless surroundings.
5. In nature, the action, more or less persistent of certain intermediary animals, has imprinted upon the bacillus of tuberculosis particular modifications, more or less profound, or more or less stable, which authorise one to admit variations or races of this bacillus whose specification nevertheless remains entire.
6. Amongst the better characterised varieties, although in a way inconsistent and unequal, we can distinguish three principles, corresponding to the three sets of animals more or less different. These are (*a*) the bovine variety peculiar to cattle, (*b*) human variety living chiefly in man, (*c*) bird variety, very different from the others, because it is adapted to the organisms of those birds which are most distant from mammifers.
7. This division is purely conventional, for it rests on characteristics which are only frequent, but not constant nor equally pronounced; hence the transitional types, not only in different species of animals, but even in a particular species.
8. Human and bovine varieties, otherwise the nearest, are often confounded in media which are suited to them—they are most frequently confounded in intermediary animals, such as the guinea-pig, the rabbit, the dog, the cat, the monkey, and even the pig and the goat.
9. Experience having established that these varieties of Koch bacillus are at the same time reversible and susceptible of passing from one species of animal to another, there is good cause for studying them from a hygienic point of view, as far as the risk is concerned of reciprocal danger between creatures of different species.
10. At the same time this danger is only relative; for if in conditions of real life tuberculosis is transmitted principally between creatures

of the same species, it is not the less true that it is also communicated by heterogeneous contagion, but in an unequal fashion, according to the species of animals and the variety of bacillus which one is considering, and under this head the virus of *grapes* above all, on account of its habitual high virulence for all animals, including the monkey, and of its presence in all elementary products, notably in milk, is more to be feared for man than the human virus for cattle.

As for tuberculosis of the bird, it may be considered as only slightly dangerous to mammifers.

The subject was finally discussed at a conjoint meeting of sections 1 and 2 on September 5th, presided over by Dr. Preis (Buda Pesth) Baron Van der Bruggen, minister of agriculture, occupied the presidental chair during the discourse of Professor Arloing (Lyons).

Professor DEJONG (Leyden) recalled that in 1882 Koch described the bacillus of tuberculosis, and in 1900 he affirmed that the human tubercle is different from the bovine tubercle. M. Dejong is of opinion that the human bacillus is less virulent than that of the ox; but that these bacilli are identical; the experiences of Koch and Schutz are not confirmed by the most of authors. Sometimes one can isolate from man a bacillus less virulent than that of the ox; this is a fresh proof in favour of the identity. It is impossible to differentiate the two bacilli by inoculation of the large mammifers.

Culture has also not been able to establish a distinction. But the virulence may vary; tuberculines procured from all bacilli are the same.

Avian tuberculosis appears different. The pathogenic action of the avian bacillus is different from that of the mammiferous bacillus. The bacilli of the avian type are fairly constant in their characters; at present it is not possible to determine certainly the identity of these two bacilli. The speaker finished by remarking that Koch's theory is not justified, it must be maintained that tuberculosis of mammifers constitutes a real danger to man.

M. BRATIA (Brussels) declared the identity of tuberculosis in all kinds of animals, even in birds.

The differences which one wished to establish are not *absolute* and not *permanent*. It would be necessary to attribute all modifications to the influence of the medium.

We ought not to make distinctions of species. The theory of duality even more than that of plurality ought to be abandoned. The speaker distinguished many varieties more or less fixed.

The identity of the bacilli is chiefly proved by their reversibility as well as by their bio-chemical characters. Behring has demonstrated that there is only one common poison which he has called *tuberculosine*. The *pseudo tuberculoses* do not react to any *tuberculine*, which leads us to distinguish clearly the *tubercular bacilli* from the *pseudo tubercular* bacilli, and to bring together those of man and the lower animals.

He then reported that he had transferred human tuberculoses to pigs and other animals. He has obtained positive results, but also negative results—only the latter did not suffice to deny the identity; to arrive at this result it would be necessary to establish demonstrative *statistics*.

Experimental facts fail to show that the ox can infect man; however, it

is known that skin infections of man come from frequent contact with the flesh of tuberculosis animals. It is by this favourable fact that one has ground to declare that bovine tuberculoses only gives slight local lesions. The speaker, however, drew attention to the fact that there were at times infection of the glands. This virus applied to the ox in the same way is no longer offensive, the skin being an entrance door little favourable to infection.

Concerning intestinal lesions, of which M. Gratia had observed a great number, he had not concluded yet from them that they are of bovine origin, but they are certainly of alimentary origin. He (M. Bratia) summed up that the tuberculosis of man and that of mammifers belong to species determined by the bacillus of Koch.

Professor S. ARLOING of Lyons.—In stating the question now under discussion the organisers of the Congress have quite understood that the conflict sustained by Messieurs Koch and Schutz on the ground of practical Hygiene cannot be appeased otherwise than by the solution of the scientific problem. M. Arloing would endeavour to remain upon experimental territory. Messieurs Koch and Schutz propose the suppression of sanitary measures affecting products furnished by tuberculous animals, tuberculosis of the ox, as they think, not being the same as human tuberculosis. In effect, after the transmission experiments which they have made, human tuberculosis is capable of infecting the ox, but after a critical examination to which they devoted themselves it was not demonstrated that bovine tuberculosis could be communicated to man.

Since the identity of the two tuberculoses was proclaimed by Villemin and established by M. Chauveau, a great number of experiments have proved, before as well as after the Koch Conference in London, that tuberculosis of man is generally less infectious than that of the ox, but that it is possible nevertheless to infect experimentally cattle in proportion of 67 cases in 100 (infection regional and infection general), and that bovine tuberculosis varies in cattle at the rate of 60 per cent. of cases. About the transmission of human tubercle to cattle, persistently contested by Mill, Koch, and Schutz, M. Arloing adds examples of contamination of the pig by the use of remains of food from the sick of the Hanteville Sanatorium, according to the observations of Dr. Dumarest.

In spite of a number of crushing and contradictory facts; in spite of their own experiments, the results of which have not always been negative; in spite of the experiments published by the German Imperial Sanitary Office; in spite of the small number of persons who cite facts in support of a differentiation, the partisans of duality persisting in their opinion, the discussion merits a closer inspection.

In any case M. Arloing estimates that no advance will be made as long as we do not agree on a certain number of points which are, in a way, so many questions of principle.

1. The utility of rigorous experimental criticism.
2. The value of the cases of inoculation and the importance of doses.
3. Characteristics of positive inoculation.
4. Contamination of the results of inoculation.
5. The value of histological and anatomical characteristics of lesions.
6. The variability of Koch's bacilli.

M. ARLOING examines each of these points, and endeavours to show that

strict discipline drawn from the preceding considerations can alone help forward the solution and put an end to the negations.

Parenthetically, he indicates the circumstances in which the dualists have gone aside from this discipline. He defends the value of intravenous inoculation which had not been comprehended by certain persons; also those of inoculations followed by ganglionary lesions which he regards as positive. He lets it be seen in collaboration with M. Pajiot that, in doubtful cases, the success of an inoculation ought to be sought by the aid of the histological examination of the principal parenchymatous viscera and of the lymphatic glands, and that the separation of animal tubercle of whatever species is not justified by histology.

M. ARLOING insists particularly on the variability, of which he insists upon the importance. Though not giving an exact definition, MM. Koch and Schutz have committed themselves to separate bacilli which are, however, from one common source. He quotes his former observations on ganglionary tuberculoses and visceral tuberculoses of man, extended to boney and articular tuberculoses, to lupus and different cases of pulmonary tubercle, demonstrating the existence of a virus of unequal activity in the diverse forms of the malady; then his more recent studies on the morphological variations and cultures of the bacillus of man, and also of the bacillus of the ox, of some bacteriologists. He reminds us that these cultures in both are of homogeneous aspect, of the two bacilli of which he is the demonstrator, in which these agents, taken, however, from classic cultures of solid foundation, have acquired a particularly virulent form. *Between two bacilli of the human or two bacilli of bovine origin there may exist as much difference as between so-called human bacilli and so-called bovine bacilli taken as types.*

However, it would never enter the mind of any one to admit several species of human bacilli and bovine bacilli.

The impartial study of facts in the light of the principles of experimental methods in favour of certain pathogenic notions and of general bacteriology, leads us finally to conclude that human tubercle and that of animals arise from the same kind of microbe—the bacillus of Koch.

In finishing, M. Arloing drew attention to the fact that on account of their experimental criticism MM. Koch and Schutz acknowledged that tuberculosis of man produces sometimes generalised infection in the calf, and that in this case it is of bovine origin. Tuberculosis of the calf inoculated on the calf and stopping sometimes in the nearest ganglion ought, according to the same criterion, to come from man. Therefore they were forced to face the possibility of a reciprocal infection; but he would advise us to neglect these cases on account of their rarity. The deduction, it may be, is wanting in humanity. It has still other consequences.

M. ARLOING drew the attention, like Von Behring, that cases of contamination by alimentary products are probably most frequent amongst children. Moreover, one might fear that contaminated individuals, although of small number, might finish by creating foci around them.

He concluded by saying that no scientific reason could stop measures being taken against the danger arising from animal tuberculosis, that the *rôle* of the latter is assuredly less great than that of human tuberculosis in the propagation of evil on our species, but that it would be illogical and imprudent to misunderstand it. We must be diligent in endeavouring to carry on the work of rational preservation, and to reconcile the latter with all the interests within the limits traced by science.

M. KOSSEL (Berlin) is of the opinion that the study of that question ought to be continued, and that one should wait before coming to definite conclusions. He bases his idea on the experiments which are made at the laboratory of the Sanitary Office, but which are not yet completed.

It has been proved that those who believe that the flesh of animals attacked by tuberculosis is dangerous are not able to cite other examples of tuberculosis in the digestive organs (arising from the *ingestion* of such flesh) than those which were combated by M. Koch at the conference on tuberculoses at Berlin in 1902.

M. BUJURD (Cracovie) showed some experiments he made on some heifers; he showed to his auditors some tuberculoses of the mesentery. Human tuberculosis, according to him, may be propagated by the intestinal canal, but not by the mode of subcutaneous injections.

M. BORDETT (Brussels) thinks that human and bird tuberculoses belong to the same species from the point of view of natural history. He supports his opinion on the experiments he has made with M. Gingon.

M. LIGNIERES (Buenos Ayres) believes that the principal point of the question rests in the fact that the differential characters are *constant.* The microbes must be examined as we find them in nature, and not after being mutilated. One can then affirm that tubercles in man and birds present constant differential characters.

The speaker distinguished not only a degree but also a quality in the virulence. He thinks there exists a human and a bovine type. Inoculation proves this, for when one inoculates an ox with little doses of bovine microbes, positive results are always obtained by the reaction of the tuberculine. If the same experiment is made with human tubercle, local lesions are generally obtained. Reaction to tuberculin is obtained during weeks, even months, but it is not permanent.

All microbes have specific characters well fixed, and they have also variable characters.

Microbes of a bovine type are only exceptionally found in man, and perhaps microbes of a human type will be found some day in the ox.

Bacilli of man, of the ox, of the bird, are types derived from the same ancestor. They are types of the same species, but have *constant differential characters.*

In one case the speaker took from the intestinal glands of a young child a bacillus which behaved like the bacillus from bovine tuberculosis. Nevertheless, M. Lignieres is of the opinion that prophylactic measures should be maintained because the *service* is *organised.* On the other hand, he recalls the contagiousness of the bovine tuberculoses for the bovines.

Mr. FIBIGER sums up the conclusions of his report, and insists on the danger on contamination to man by bovine tuberculosis.

Professor PERRONCITO (Turin) admits the existence of types of distinct tuberculosis, but defends the measure taken against the possible contagion by the ox tribe.

M. PRISIS thinks that the bovine bacillus is sometimes dangerous to man; however, the bovine bacillus and that of man are not absolutely identical—the human bacillus being less dangerous for the ox.

Professor LŒFFLER (Greipswald) refers to the great frequency of bovine bacilli in food—such as in butter—without there being a corresponding frequency of contamination by this bacillus. The contamination of human beings by human beings is infinitely more frequent than that of bovine origin, and it is against the former that we should fight.

Mr. PERRONCITO thinks that there is in the bovine species a tuberculosis identical to that in man.

Professor MONTCARRAT (Lille) insists on the frequency of tuberculous mammitis, and on the danger to the human species.

Gn. V. DELPORTE asked if it is admitted that tuberculosis can be transmitted by vaccination.

Professor CHAUVEAU (France) replied in the negative.

M. KIRCHNER remarked that the transmission by foods has less importance than the contagion from man to man. It is against this latter that exertions must be made.

M. CZABLENSKI (Cologne) admits the different kinds of tuberculosis, and believes in duality.

Mr. PFEFFER (Konigsberg) thinks that the danger of contamination to man by the bovine bacillus is infinitesimal.

Professor CHAUVEAU (France) repeats his experiences, proving that an ox can be infected by the human bacillus. M. Fibiger insists on the frequency of primary intestinal tuberculosis, and asked Professor Lœffler if he considers infection by milk of little importance. Mr. Lœffler replied that infection by milk is extremely rare.

Mr. DE JONG insists that Professor Koch's theory that tuberculosis of human beings is always inoffensive for the ox and *vice versa* can be believed by no one now-a-days.

Mr. ARLOING considers as decided that bovine tuberculosis *can* be sometimes transmitted to man—that suffices for the justification of all the prophylactic measures. The President submitted to the assembly a motion supported by three of the members, Messrs. Arloing, Gratia, and De Jong, in favour of maintaining the prophylactic measures against the bovine bacillus, after some suggestions by Mr. Kirchner (who demanded that the fact be mentioned that human tuberculosis can be transmitted from man to man); Messrs. Montcarrat and Constant (who demanded that the motion be very explicit on the obligatory character of prophylactic measures against the bovine bacillus); by Messrs. Wassermann and Lœffler (according to whom human tuberculosis of bovine origin is possible without being frequent, whilst human tuberculosis is transmitted mostly from man to man, nevertheless, in the present state of our knowledge the Congress considers that there is good reason to prescribe measures against the possibility of infection to man by animals). The motion was carried by 25 to 5.

Another question of considerable importance to us was the discussion in Section II. on the various kinds of meats affected with various diseases which might or might not be considered fit for food, and an excellent paper was read on this subject by M. Ch. Morot, Director of the Abattoirs at Troyes (France). The discussion was opened by M. Stubbe, who was of opinion that meat ought to be rejected (*a*) in cases of pyæmia, on account of the numerous abscesses which are scattered everywhere; (*b*) in cases of gangerous septicœmia, on account of the presence of septic vibrions; and (*c*) in cases of trichinosis. In the case of measly pork, he thought that when the lesions were localised the flesh may be used after sterilisation.

M. LAHO said that as soon as a cysticerous is discoverable it is a sign of infection, and indicates that there must be others in the muscles; the flesh must be subjected to means capable of destroying the worm.

M. PERRONCITO thought the simplest means was refrigeration, as the cysticerci are certainly killed at freezing point.

M. CONSTANT agreed. He approved of consumption after refrigeration, but not in the fresh state. The meeting adopted this opinion, but thought that either heat or cold would destroy the cysticerci.

ACTINOMYCOSIS.

The meeting agreed by a large majority that all flesh should be seized when there are lesions in a great many organs.

TUBERCULOSIS.

M. MOROT insisted on the importance of looking for lesions in the intermuscular and visceral lymphatic ganglia (glands). We must not rest satisfied with examining the surface of the viscera, but must also examine the inner parts of those even which look healthy on the surface; when we sterilise we must do it at the abattoir, and not allow meat to go out therefrom in a fresh state. He added, we must watch carefully for the invasion of the ganglia of the bronchi and trachea; the extension to the mouth and tongue is easy. He insisted on the destruction of the head, which he considered dangerous; besides, like the viscera, the head was not worth sterilising. M. Laho was of this opinion, but M. Montsarrat disagreed, and the meeting thought that there was no use in taking M. Morot's precaution.

Messieurs LIENAUX and HAQUET reminded the meeting that the microscope reveals lesions in organs apparently healthy. They were of opinion that all the viscera should be seized, differing from M. Stubbe's opinion that only the viscera in which tubercles can be observed should be seized.

M. STUBBE said that a great many cases occur in which we find lesions of the ganglia, and in which microscopic sections of the organs show no lesions; this was a matter of daily occurrence.

M. DIEDRICH reminded the meeting that in Germany all the organs have to be rejected as soon as the corresponding lymphatic glands are affected by tuberculosis.

M. CONSTANT said we must not exaggerate the dangers of localised tuberculosis. Important interests are at stake. Bovine tubercle being of great extent, we must not withdraw too large a quantity of meat from sale, and yet must do what we can towards prophylaxy. He thought the danger was exaggerated, and recalled M. Nocard's warning to this effect.

M. DERVO was against the radical measures of Lienaux and Morot, because the viscera are subjected to cooking before use. The case was different with regard to fat which was made into margarine, oleo-margarine being extracted at about 40° (cent.). He thought that no fat should be allowed to go out before being subjected to a heat of 100°.

M. RAPPYN of Nantes was of opinion that the microscope allows detection of bacilli of tubercle even in the blood. He approved of great severity. M. Lignieres objected, saying that inoculation proves that these bacilli do not exist in the blood.

M. STUBBE repeated the observations made in his report regarding pasteurelloses and salmonelloses (hæmorrhagic septicæmiæ); meat in such cases, he said, ought to be rejected when there exist lesions in the muscles (bleeding meat, &c.).

M. MOROT said that the flesh of calves affected with diarrhœa *plus* fever ought to be rejected.

M. DERVO added acute enteritis, but M. Stubbe did not agree.

The meeting by a large majority adopted a motion excluding the flesh of calves affected with acute diarrhœic enteritis, as also the flesh of horses affected with typhoid fever and of oxen affected with bacterian anthrax.

M. STUBBE maintained that the flesh of swine suffering from rouget may be consumed when the fat and flesh are not infiltrated. M. Morot stated that unfortunate results had often followed, and spoke in favour of sterilisation of such meat. M. Lienaux supported. The meeting decided that meat of this sort may be consumed if it has a wholesome appearance.

The meeting adopted M. Stubbe's motion that the flesh of animals suffering from contagious pleuro-pneumonia may be consumed.

M. STUBBE said that in cases of cattle plague the flesh is innocuous to man, but, with a view to prevent the spread of germs amongst cattle, it ought to be rejected.

It was agreed, on the motion of M. Stubbe, to reject meat in cases of strangles and anasarca. It was also agreed that in cases of psorospermosis meat is to be rejected only when there are found calcareous salts or pus.

The meeting proceeded to discuss albuminuria (with infiltration), hydræmia, uræmia, carcinomatosis, "fevered" meat. This last term was considered unscientific, and rejected in favour of "infectious meat." With regard to poisoning, a motion was adopted ordering the seizure of meat in all cases in which it is hurtful to the health of man. It is difficult to lay down special laws.

FINANCE COMMITTEE.

Mr. TRIGGER read the report, which stated that the Secretary to the Board of Examiners of Ireland had asked for an increase of salary from £10 to £20, but the Committee were unable at present to recommend any alteration. It was recommended that a salary of £40 be allowed to the Secretary in Scotland, and ten guineas to the Secretary in Ireland.

On the motion of Mr. TRIGGER, seconded by Mr. MULVEY, the report was adopted.

REGISTRATION COMMITTEE.

The SECRETARY read the report of the Registration Committee, which stated that the Committee considered the application of Mr. James Miller Eckford for the Diploma of the College, but being the holder of the veterinary certificate of the Highland and Agricultural Society, and being satisfied of the identity of the applicant, recommended the Diploma to be granted on the payment of the customary fee. The Committee recommended the restoration of the names of Mr. Richard Miller and Mr. Charles Montague Seely, on payment of the usual fees. The Committee recommended prosecutions against certain persons, and that cautionary notices and further enquiries should take place in others.

Mr. MULVEY said, in reference to the application from the gentleman holding the Highland and Agricultural Society's certificate, it appeared there was no bye-law in regard to the subject of what fee should be paid. At the suggestion of the Solicitor, he therefore gave notice that at the next meeting he would propose the following bye-law: "That the terms and conditions on which the Diploma of the College shall be granted to holders

of the veterinary certificate of the Highland and Agricultural Society of Scotland shall be evidence of identity, that the applicant has not done anything to bring himself within the disqualifications mentioned in Section 6 of the Act 1881, and that he pay a fee of one guinea."

The report of the Registration Committee was adopted.

EXAMINATION COMMITTEE.

Mr. MULVEY read the report of the Examination Committee, which stated that a letter was read from a Professor of Pathology, and the Committee considered the explanation given by him as satisfactory. Reports were read giving the results of the July examinations in London and Dublin, and also reports from the examiners and delegates. The Committee had nothing special to report to the Council.

The report was adopted.

SUB-EXAMINATION COMMITTEE.

Professor METTAM said that the Committee considered certain parts of the syllabus, and had adjourned because they required further information.

PUBLICATION COMMITTEE.

Mr. DOLLAR read the report, which stated that it was agreed that the contract be continued with Messrs. Allard, and that it be left to the President and Treasurer to make the best terms for the printing and publishing of 500 copies of the Register. It was recommended that each member of Council be asked to notify to the Secretary any alteration in the Register before the 31st of December, and that a supplementary list of those students who passed at the Christmas Examinations be published in the new Register.

The report was adopted.

COMMITTEE *RE* MEMORIAL TO VETERINARY OFFICERS AND C.V.S. WHO DIED IN SOUTH AFRICA.

Mr. MASON read the report, which stated that specimens of the proposed tablet were submitted, and the Committee recommended that the estimate of £15 be accepted, and that a suitable position be selected by the Council where it should be fixed in the Council Chamber.

A discussion took place as to the suitability of the proposed wording of the tablet, and it was eventually agreed that the following wording should be substituted for that proposed by the Committee :—"This tablet has been placed upon the walls of the College in memory of the veterinary surgeons who died while serving their country in the South African War, 1900–2," and that the present date, 1903, should be put at the bottom corner of the tablet, indicating the date when the tablet was erected.

Mr. MASON stated that the following names would be placed on the tablet, and that the Committee would be thankful if members would supply any other names that ought to be included :—F. F. Crawford, J. Laughlin, W. H. Hirst, E. T. C. Ensor, R. Armstrong, W. Kidd, G. Sykes, H. E. H. Davies, D. C. Barningham, E. A. L. Fenner, C. MacGregor.

The report of the Committee was adopted.

JUBILEE MEMORIAL AND BURSARY FUND.

Mr. TRIGGER moved, that in view of the fact that there was no application for examination, that the matter be referred back to the Jubilee Memorial Committee for further consideration, to see if any recommendation could be made as to the terms; he thought the amount might be enlarged if it were not given so often.

Mr. LAWSON seconded the motion, which was agreed to.

APPOINTMENT OF SECRETARIES FOR SCOTLAND AND IRELAND.

Mr. TRIGGER moved the reappointment of Mr. Rutherford as Secretary for Scotland, and that he be allowed to have an honorary assistant, in accordance with the resolution at the last Council meeting authorising Mr. Rutherford to employ his son as honorary assistant.

Mr. MULVEY seconded the motion.

The PRESIDENT stated that Mr. Rutherford in his last communication resigned, and then withdrew his resignation conditional on having a paid assistant. Supposing Mr. Rutherford did not accept the reappointment what was he to do?

Mr. MULVEY said that in case of an office becoming vacant it was in the power of the President to appoint some one to act temporarily until the Council met, when the vacancy was advertised and a new appointment made.

Mr. SHIPLEY proposed that a Committee should be appointed to consider the question of the Secretaryships of the College.

Mr. CARTER seconded the motion, which was lost, only three voting for.

Mr. RUTHERFORD was unanimously elected Secretary for Ireland.

APPOINTMENT OF RESERVE EXAMINERS.

The PRESIDENT said he asked the Secretary to make a note of this question simply for the purpose of calling the attention of the Council to the great difficulty the President had on nearly every occasion when there was an examination, through finding quite suddenly that some examiner was unable to appear. That had occurred at each examination held recently, and it was extremely difficult to get a substitute at a few hours notice. He requested the Council to consider a suggestion of his which he made some years ago, namely, the appointing of three examiners, instead of two to each table in each section, two of whom would be on duty, and one in reserve. It would make no difference to the College financially, and it would relieve the President of a very great difficulty.

Professor M'FADYEAN thought that no foresight could entirely arm one against such an emergency, and thought that the best way of dealing with such cases was to leave the power in the hands of the President. It had always been possible to conduct the examination in the past, and he thought it probable that it would always be found so in the future.

After a little further discussion the subject dropped, the President stating that he had simply brought the matter forward in the interests of future Presidents, because it would not concern him after the next examination.

DATE OF FELLOWSHIP EXAMINATION.

On the motion of Mr. Trigger, seconded by Mr. Wragg, it was agreed that the fellowship examination should be held in London on Saturday, December 12th.

The PRESIDENT stated that he had received a request that a full day should be allowed to the examiners between the visit to Scotland and Ireland, the examiners considering they had not a sufficiency of time to recover from the sea voyage; they travelled all night, arriving in a bedraggled condition in Dublin in the morning, and did not feel fitted to examine that day.

Professor METTAM said he had no objection, so long as they were willing to do the day's work when they got there, and were not in such a great hurry to get away, as they had been in the past, when several examiners had gone away before the records had been made up.

FUTHER CONSIDERATION OF LETTER FROM THE WORSHIPFUL COMPANY OF FARRIERS.

Mr. DOLLAR, resuming the discussion which he opened at the previous meeting of Council, gave an account of what had happened since the inception of the scheme by the Worshipful Company of Farriers, and after reading a long speech, concluded by moving that the letter should be courteously acknowledged, and that in the present state of their knowledge regarding the scheme they did not feel themselves qualified to express any opinion.

Professor M'FADYEAN formally seconded Mr. Dollar's proposal.

Mr. TRIGGER was convinced that the scheme for the registration of farriers had done a great deal of good to improve the art of farriery and shoeing, and moved as an amendment that in the opinion of the Council the registration of farriers had done very much to improve the art of farriery throughout the country.

Mr. WRAGG continued the discussion, and was speaking, when on the motion of Professor M'Fadyean, seconded by Professor Shave, the discussion was adjourned to the next meeting of the Council.

NOTICES OF MOTION.

Mr. BYRNE gave notice that at the next meeting of Council he, or Professor Mettam on his behalf, would move that the subjoined bye-law be substituted for bye-law 76:—

> "(76.) Each candidate for the office of examiner shall, at least 14 days before the date of an election, intimate in writing to the Secretary, either by himself or with his consent, by a member of the R.C.V.S., his desire to be appointed, *and submit with his application a statement of his qualifications and a copy of any testimonials he may possess as to his especial fitness for the position he seeks.* The name and qualifications of each candidate shall be suspended on the notice-board at the College as and when received, and appear on the circular convening the meeting at which the examiners are to be appointed. Each examiner shall be elected for such period, not exceeding three years, as the Council may think fit. Each examiner shall be removed by the vote of two-thirds of the members present at any meeting of Council to be confirmed at a special meeting called for the purpose."

Mr. TRIGGER stated that he would suspend a notice to the effect that no business which entailed the alteration of a bye-law should be considered by the Council unless three-fourths of the members were present.

This concluded the business of the Quarterly Meeting.

At the conclusion of the Quarterly Meeting a Special Meeting of Council was held. Professor W. O. Williams occupied the chair, and the same members were present as at the Quarterly Meeting, with the exception of Messrs. Lawson, Over, and Shipley.

The business on the agenda was to consider and, if deemed necessary, to pass the following alterations of bye-laws 62, 63, 64, 65, and 67, of which notice had been given by Professor M'I. M'Call.

"(62.) No student shall be eligible for the first examination until he shall have attended for one session at a recognised veterinary school the various classes on the subjects included in Examination A."

"(63.) No student shall be eligible for the second examination until he has complied with the preceding bye-law, and subsequently has attended for one session at a recognised veterinary school the various classes on the subjects included in Examination B."

"(64.) No student shall be eligible for the third examination until he has complied with the preceding bye-law, and subsequently has attended for one session at a recognised veterinary school the various classes on the subjects included in Examination C."

"(65.) No student shall be eligible for the fourth examination until he has complied with the preceding bye-law, and subsequently has attended for one session at a recognised veterinary school the various classes on the subjects included in Examination D."

"(67.) No student shall be eligible to present himself for more than one examination, namely, A, B, C, or D, at the time when these respective examinations are held; and each examination must be passed in consecutive order."

Professor M'CALL, in moving their adoption, said the parties with whose interests the welfare of the R.C.V.S. was inseparably bound up were (1) the veterinary students and their parents or guardians, (2) the teaching schools, (3) the R.C.V.S. itself. He would endeavour to show what effects would accrue to them through the passing of the altered bye-laws. With regard to the effect on the veterinary students, the successful veterinary student who attended his various lectures and passed each examination without a single failure would not be affected by the alteration, and the same remark applied to his parents or guardians, the teaching schools, and the R.C.V.S. With regard to the rejected students, he did not necessarily mean a bad or a lazy student, although such undoubtedly existed; but all who had experience in connection with professional examinations knew that there was to a certain extent an element of chance in the results, and not infrequently the balance between a man passing and failing one day might be altered or even reversed under conditions, favourable or otherwise, which might occur during the course of the oral examination even on the same day. In regard to the effects of rejection on the student under the existing bye-law, in the first place, rejection, even at one examination, necessitated an extension of the student's curriculum at the teaching school for a period averaging six months, and threw him out of the race for class honours during the remainder of his college career. In the second place it prevented the student from starting his succeeding year of study at the time when the lectures on the various subjects of that year's course commenced, and if the student was successful in passing his examination at the next attempt, say at the Christmas sitting, it necessitated his beginning the

study of the various subjects for the next examination after the session was so far advanced that the essential and most important details of those subjects had already been lectured on and explained, and thus compulsorily placed the unfortunate student in the position of a person who attempted to read before he had learned the alphabet. The proposed alteration of bye-laws would enable the student to attend the succeeding year's classes and take notes of the lectures, &c., from the commencement of the session until the date of his re-examination, and thereafter, if successful in passing, to put in his attendance at lectures until the end of the session, when he would be equally qualified with the successful student to present himself for his next examination, thus saving him a loss of six months, with the attendant disadvantages and expenses, and would also allow him to compete for class honours with his, in the first instance, more favoured fellow student.

It would also enable the student with the average number of failures in the professional examination to complete his course of study and get his diploma at the expiry of his four years' attendance at college, and even if he had not qualified in that time, it enabled him to leave the college and go as a pupil to a veterinary surgeon in practice, obtain a practical knowledge, which he was at present prevented from getting, read up for his examination, and return to college at the time when the next professional examinations were in progress, and then to qualify, having gained experience and saved himself loss of valuable time and considerable personal expense. With regard to the effect on the parent or guardian of the student, that must be considered from a purely financial point of view. The cost of the student's upkeep, class-fees, &c. could not be put at less than one hundred pounds. If, therefore, it were admitted that each rejection of a student under the existing bye-laws meant on an average a six months' extension of curriculum, on the foregoing estimate the extra expense to the parent or guardian would be £50, and if they looked over the annual report of the R.C.V.S. for 1902–3, it would be seen that seventy men were rejected in their first professional examination, consequently, the cost to the parents or guardians for those rejections would work out at £3500. In the second professional examination thirty-nine men were rejected, costing the parents £1950. In the third professional examination fourteen men were rejected—cost to the parents, £700. In the fourth professional examination twenty men were rejected—cost to parents, £1000, making a total of £7150 extra cost to parents or guardians, a large proportion of which sum would be saved if the proposed alteration of bye-laws was passed. The effect on the teaching colleges must also be considered from a financial point of view, and an element of loss was unavoidable, but it would only amount to the small fee charged for the extra term or terms of compulsory attendance at college, in excess of the four sessions, which the present regime necessitated. That, however, might be neutralised by the advantages that under the proposed alteration of the bye-laws, the parent or guardian of a prospective student had a guarantee that even with average rejections allowed for, a student would be able to qualify for all of his examinations in a term of four years, attendance at college, and not, as at present, on an average term of five years, or even more, with the certainty that the probable cost could then be computed with comparative accuracy, and not as now be an unknown quantity. That would probably be a greater inducement to send lads to college, and if it gained a few students to the teaching college, then the extra fees paid by them would probably total more than the small fees previously paid by

the rejected students. It would also have the advantage of doing away with the objectionable class of "chronics" which at present were in attendance on each course of study, men who had already full notes of the lectures, were inattentive themselves, and who frequently diverted the attention of the regular students. The effect on the R.C.V.S. itself could be stated very shortly. If the proposed alterations were passed, the R.C.V.S. would, under the new regime, receive a more speedy influx of the examination fees paid by the rejected students, and might hope in four years time to draw the same, or possibly a higher revenue than they now did in an average of five years, or even longer.

Mr. COPE seconded the proposal.

Professor M'FADYEAN said that the mover's whole case for making any alterations rested on the assertion that rejection at an examination was largely a matter of luck. If there were the slightest justification for holding that opinion it would be high time to consider the advisability of altering the bye-laws; but he dissented entirely from the conclusion that in any considerable proportion of cases where a student passed or was rejected was a matter of luck. As a teacher, he professed at the end of a session to be able to tell pretty well what students had a reasonable knowledge of their subjects and what students had not. Twice yearly, before the examinations, he mentally estimated the proportion of passes in his own particular subject, and he had no hesitation in saying that the actual percentage of passes in the ensuing examination never differed to a very great extent from the estimate which he had himself formed. In the great majority of cases the student was rejected because of want of knowledge, and he deserved to be rejected. It was in his interest and in the interests of the parent that he should be rejected and relegated to the precise studies in which he had been found deficient. It would be very bad education to encourage a student who had been found deficient in junior anatomy, chemistry, and biology, at the beginning of the next term to take up the study of senior anatomy, physiology, and stable knowledge, while he was not conversant with the subjects of the first examination. His objection to altering the bye-laws was, that it would not be in the interests of the students, but contrary to their interests, contrary to the interests of the school, and contrary to the interests of the parents.

On the motion of Mr. MULVEY, seconded by Professor M'FADYEAN, it was resolved that the question be now put.

Professor M'I. M'CALL argued that he had the right of reply before the question was put, but the PRESIDENT ruled that he was not entitled to do so if the majority of the meeting desired that the question be put without discussion.

The motion was then put and lost, only one voting for.

A vote of thanks having been passed to the President for his conduct in the chair, the meeting terminated.

Army News.

The Broad Arrow of Saturday, 17th October, says:—"The improvement in the pay and status of the officers of the Army Veterinary Department comes none too soon. . . . It is of course always a question if combatant titles should be given to non-combatant officers, and the grant to the Army Medical Service was only made under considerable

pressure. . . . The Veterinary Department was less influential, and the concession was not extended to its officers. But it was obviously an injustice that the Veterinary Service should have been excluded, and Mr. Brodrick's last official act has been to put this right. . . . The pay is reasonable and the pension is liberal, while the status is now the same as that of all officers of the army.

This should satisfy the veterinary profession, and we cannot doubt that it will."

The Secretary of State for War has sanctioned veterinary officers, not exceeding eight per annum, attending the course of instruction given in the School of Tropical Medicine of the Liverpool University, the fees and officers' travelling expenses being paid from Army funds. The courses are held in the spring, summer, and autumn terms, commencing on January 14th, May 1st, and October 1st, and last about two months.

THE TROOPS AND THE TRANSPORT.

Besides the horse-drawn transport there are twelve traction engines which can draw loads of about 10 tons each at four miles an hour. There are also three steam lorries capable of travelling at eight miles an hour, and they were to be experimented with as a rapid form of mechanical transport for accompanying cavalry. They were entrusted with the tents and blankets of the cavalry on their 40-mile march from East Meon to Newbury this morning, and shortly before the time of writing eight hours after the arrival of the cavalry—had not made their appearance.—*Times*, Sept. 17th, 1903.

This notice may be of interest to our readers as we have lately heard a great deal about the extinction of the horse as a means of transport. It would appear from the above that steam traction in this instance was not a complete success. Some months ago there was much correspondence in the papers about these steam lorries.

INDIAN STAFF APPOINTMENTS.

According to the *Pioneer Mail* of Allahabad, the new rules for the tenure of staff appointments in India, under which the term of appointment is reduced to three years, extensible to five years, will not apply to the Commander-in-Chief or to the medical, veterinary, and personal staff. The rules will have effect as from April 1st last, and will shortly be published in Indian Army Orders. The general question of relaxing the existing rules regulating the financial powers of lieut.-generals of commands, has for some time past occupied the attention of the Government, and it is expected that orders on the subject will be issued before the close of the current financial year.

THE BULLER STATUE.

The Corporation of Exeter has granted a site at the principal entrance to Barn Meadow, Exeter, for the equestrian statue to General Buller which the memorial committee have commissioned Mr. Adrian Jones to erect. Mr. Jones, who was formerly a military officer, is proceeding with his commission as rapidly as possible. The statue will be 24 feet high.—*Daily Mail*, Oct. 5th, 1903.

Veterinary Captain Adrian Jones, M.R.C.V.S., was formerly veterinary officer of the 2nd Life Guards.

LIST OF OFFICERS IN THE INDIAN CIVIL VETERINARY DEPARTMENT.

No.	Rank and Name of Officer.	Designation of Appointment.	Remarks.
1	Vet.-Lieut.-Colonel J. W. A. Morgan, M.R.C.V.S.	Inspector-General Civil Vet. Department, Simla.	
2	Vet.-Major J. Brodie Mills, M.R.C.V.S. . .	Principal, Bombay Veterinary College, Bombay,	On one year's furlough from 7th March 1903.
3	Vet.-Major W. R. Hagger, M.R.C.V.S. . .	Officiating Principal, Bombay Veterinary College, Bombay.	
4	Vet.-Major R. H. Ringe. M.R.C.V.S. . . .	Superintendent Civil Vet. Department, United Provinces of Agra and Oudh, Lucknow.	
5	Vet.-Major F. Raymond, F.R.C.V.S. . . .	Superintendent Civil Vet. Department, Bengal, Calcutta.	
6	Vet.-Major W. D. Gunn, M.R.C.V.S. . .	Superintendent Civil Vet. Department, Madras, Madras.	
7	Vet.-Major F. Joslen, M.R.C.V.S. . . .	Superintendent Civil Vet. Department, Bombay, Poona.	
8	Vet.-Major H. M. Maxwell, F.R.C.V.S. . .	Superintendent Civil Vet. Department, Baluchistan and Sind, Quetta.	
9	Vet.-Major H. T. Pease, M.R.C.V.S. . . .	Principal, Punjab Veterinary College, Lahore.	
10	Vet.-Major G. H. Evans, M.R.C.V.S. . .	Superintendent Civil Vet. Department, Burma, Rangoon.	
11	Vet.-Captain A. S. Trydell, M.R.C.V.S. . .	Superintendent Civil Vet. Department, North Punjab, Amritsar.	
12	Vet.-Captain J. Farmer, M.R.C.V.S. . . .	Superintendent Government Cattle Farm, Hissar,	On privilege leave for two months, twenty-eight days, combined with furlough for four months, from 15th April 1903.
13	Vet.-Captain G. K. Walker, M.R.C.V.S. . .	Superintendent Civil Vet. Department, Provincial Circle, Punjab, Lahore.	
14	Vet.-Captain A. Smith, F.R.C.V.S. . . .	Professor, Punjab Veterinary College, Lahore, .	On five months' special leave from 1st May 1903.
15	Vet.-Captain F. S. H. Baldrey, M.R.C.V.S. .	Officiating Professor, Punjab Vet. College, Lahore.	
16	Vet.-Captain J. D. E. Holmes, M.A., M.R.C.V.S.	Assistant Bacteriologist, Muktesar.	
17	Vet.-Captain W. O. Dawson, M.R.C.V.S. . .	Officiating Superintendent Civil Vet. Department, Rajputana, Ajmer.	
18	Mr. S. J. Jethiji, M.R.C.V.S.	Superintendent Civil Vet. Department, Central Provinces, Nagpur.	
19	Mr. E. W. Oliver, M.R.C.V.S.	Officiating Superintendent Government Cattle Farm, Hissar.	
20	Mr. T. Rennie, M.R.C.V.S.	Second Superintendent Civil Vet. Department, Burma.	
21	Mr. K. Hewlett, M.R.C.V.S.	Assistant Principal, Bombay Vet. College, Bombay.	

Notes and News.

INDIAN CATTLE FOR THE NIGER.

Reuter's Liverpool agent telegraphed yesterday that arrangements have just been concluded between the Southern Nigerian authorities and Messrs. Elder, Dempster, & Company for the conveyance by the steamers of the latter's line of a number of Barbadian cattle into West Africa. The cattle, some thirty or forty in number in the first instance, are of half Indian breed and are intended for the Niger to improve the milk-producing kine on that river. Mr. D. V. Young, Commissioner of Agriculture for Southern Nigeria, is visiting Barbadoes to select the animals, and very great interest is being taken in the experiment, which is regarded from a health point of view as most important to white men in Nigeria. The cattle will be shipped next month or November, and will be landed at Grand Canary from Barbadoes and taken thence by the Elder, Dempster Line to Burutu, Southern Nigeria.—*Times*, Sept. 25th, 1903.

Correspondence.

SAMPFORD PEVERILL, NEAR TIVERTON,
DEVON, *Sept.* 19, 1903.

BLACKLEG.

To the Editor of the VETERINARY JOURNAL.

SIR—As the vaccination of calves against blackleg is on its trial in the United Kingdom, may I be allowed to state that up to the end of August I have heard only of five deaths from blackleg after 400 vaccinations with the Pasteur Single Blacklegine.

Three of these died within a week after vaccination and were on farms —two on one, and one on another—where they had just previously lost some calves from the disease.

One died a month after the operation and another three months afterwards. This latter case rather shook my faith in vaccination, but the percentage of deaths is so small compared with previous methods that the use of blacklegine is indicated most strongly where the disease exists.—Your obedient servant,

A. J. DOWN.

Communications, Books, Journals, &c., Received.

Agricultural Journal (Cape of Good Hope); Berliner Thierärztliche Wochenschrift; La Clinica Veterinaria (Milan); Deutsche Thierärztliche Wochenschrift; Tannoform in Veterinary Medicine (March); The Sanitary Journal; Scottish Medical and Surgical Journal; Veterinary Record; La Riforma Veterinaria; Le Mois Scientifique (Paris); L'Echo Vétérinaire (Liège); Annales de Médecine Vétérinaire (Brussels); Johns Hopkins Hospital Reports; Journal of Comparative Medicine and Veterinary Archives; Recueil de Médecine Vétérinaire; Gazette Médicale de Paris; Modern Medicine; Johns Hopkins Hospital Bulletin; Il Veterinario di Campagna (Moncalieri); Le Bulletin Vétérinaire (Orleans); Revista de Medicina Veterinaria (Bucarist); La Revista Veterinaria (Buenos Aires); Zeitschrift für Fleisch-und Milchhygiene (Berlin); Buletinul Societatii de Sciinte diu Bucuresci-Romania; The Meat Trades Journal; The Dental Record.